****************** (MT)

Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by IntelliGenetics, Inc.

MPsrch_pp protein - protein database search, using Smith-Waterman algorithm Tue Mar 24 17:04:51 1998; MasPar time 3.63 Seconds 358.098 Million cell updates/sec

dlar output not generated.

Description: Perfect Score: Sequence: >US-08-236-918A-8 (1-255) from 5674704.pep 1925

MGNSCYNIVATLLLVLNFER.....QEEDGCSCRFPEEEEGGCEL 255

Scoring table: PAM 150 Gap 11

Searched: 56404 seqs, 5096634 residues

Post-processing: Minimum Match 0% Listing first 45 summaries

Database:

a-issued 1:bacKl 2:51 3:52 4:53 5:54 6:55 7:56 8:57 9:PCT90 10:PCT91 11:PCT92 12:PCT93 13:PCT94 14:PCT95 15:PCT96

Statistics: Mean 30.414; Variance 146.494; scale 0.208

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

٠ ا ا	Score	Query Match	Length	BIG	Ħ	Description		Pred. No.
Д.	1925	100.0	255	15	PCT-US96-0	Sequence 8, 2	Applicatio	4.99e-158
2	1925	100.0	255	7	US-08-236-	, 00	Applicatio	.99e-15
ω	1116	58.0	256	7	US-08-236-	Sequence 6, 1	Applicatio	
4	1116	58.0	256	15	PCT-US96-0	Sequence 2, 1	Applicatio	٠
5	194	10.1	186	4	-680-80-SA	9	Applicatio	3.39e-07
6	183	9.5	326	G	US-08-292-	Sequence 4, F	Applicatio	
7	183	9.5		10	PCT-US91-0	Sequence 4, 1	Applicatio	
8	174	9.0	325	10	PCT-US91-0	Sequence 2, 1	Applicatio	1.23e-05
9	174	9.0	325	տ	US-08-292-	Sequence 2, 1	Applicatio	1.23e-05
10	163	8.5	355	v	US-08-292-	Sequence 6, F	Applicatio	8.63e-05
11	162	8.4	283	15	PCT-US96-1	Sequence 2, F	Applicatio	1.03e-04
12	140	7.3	206	տ	US-08-097-	Sequence 7, 1	Applicatio	4.69e-03
13	140	7.3	438	თ	US-08-097-	Sequence 11,	Applicati	4.69e-03
14	134	7.0	973	σı	US-08-162-	Sequence 10,	Applicati	1.30e-02
15	134	7.0	988	σ	US-08-162-	Sequence 14,	Applicati	1.30e-02
16	128	<u>ი</u> . ი	951	σı	US-08-162-	Sequence 2, F	Applicatio	3.59e-02
17	127	o. 6	970	14	PCT-US95-0	Sequence 11,	Applicati	4.24e-02
18	123	6.4	461	μ.	5395760-2	Patent No. 53	5395760.	8.27e-02
19	123	6.4	461	7	US-08-385-	Sequence 2, F	Applicatio	8.27e-02
20	123	6.4	486	7	US-08-243-	Sequence 1, 1	Applicatio	8.27e-02
21	123	6.4	518	7	US-08-385-	Sequence 4, 1	Applicatio	8.27e-02
22	122	6.3	314	7	US-08-444-	Sequence 19,	Applicati	9.76e-02

444	38	ωωω 4 τυ το	33 33	28 30	25 25 27
106	106 106	114 114 114	113 114 114	117 115 115	122 122 122 121 121
, io o	5.55.7	51 55 55 50 50 50	55.5 56.5	იიი 001	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
				1196 995 1011	314 1 314 335 1 474 158
011	1400	4 7 4	747	ភភ >	.,
US-08-317- US-08-317- US-08-152-	US-08-152- US-08-225- US-08-570-	PCT-US95-0 US-08-222- PCT-US95-0	US-08-050- PCT-US95-0 US-08-436-	US-08-144- US-08-162- US-08-162-	PCT-US95-1 US-08-152- PCT-US95-1 5395760-4 US-08-050-
					Sequence Sequence Sequence Patent No Sequence
		24, 24, 18,	6, 2	18, 12,	54
Applicati Applicati Applicati	Applicati Applicatio Applicatio	Applicati Applicati Applicati	Applicati Applicatio Applicatio	Applicatio Applicati Applicati	Applicatio , Applicati Applicatio 5395760.
1.33e+00 1.83e+00	6.98e-01 1.33e+00 1.33e+00	3.64e-01 3.64e-01 3.64e-01	4.29e-0 3.64e-0 3.64e-0	2.23e-01 3.10e-01 3.10e-01	9.76e-02 9.76e-02 9.76e-02 1.15e-01 1.60e-01
	106 5.5 1111 7 US-08-317- Sequence 15, Applicati 1 106 5.5 1193 7 US-08-317- Sequence 13, Applicati 1 104 5.4 219 6 US-08-152- Sequence 32, Applicati 1 5.4 219 6 US-08-152- Sequence 32, Applicati 1	110 5.7 219 6 US-08-152- Sequence 31, Applicati 6 5.5 595 5 US-08-225- Sequence 2, Applicatio 106 5.5 595 7 US-08-570- Sequence 2, Applicatio 106 5.5 1111 7 US-08-317- Sequence 15, Applicati 106 5.5 1193 7 US-08-317- Sequence 13, Applicati 104 5.4 219 6 US-08-152- Sequence 32, Applicati 104 5.4 219 6 US-08-152- Sequence 32, Applicati 105 105 105 105 105 105 105 105 105 105	114 5.9 1276 14 pcT-US95-0 sequence 24, Applicati 114 5.9 1276 7 US-08-222- Sequence 24, Applicati 114 5.9 1833 14 pcT-US95-0 sequence 18, Applicati 110 5.7 219 6 US-08-152- Sequence 31, Applicati 110 5.5 595 5 US-08-225- Sequence 2, Applicati 110 5.5 595 5 US-08-225- Sequence 2, Applicati 110 5.5 595 7 US-08-317- Sequence 2, Applicati 110 5.5 1111 7 US-08-317- Sequence 13, Applicati 110 5.4 219 6 US-08-152- Sequence 32, Applicati 110 5.4 219 6 US-08-152- Sequence 33, Applicati 110 5.4 219 6 US-08-152- Sequence 33, Applicati 110 5.4 219 6 US-08-152- Sequence 33, Applicati 110 5.4 219 6 US-08-152- Sequence 34, Applicati 110 5.4 219 6 US-08-152- Sequence 36, Applicati 110 5.4 219 6 US-08-152- Sequence 37, Applicati 110 5.4 219 6 US-08-152- Sequence 38, Applicati 110 5.4 219 6 US-08-152- Sequence 39, Applicati 110 5.4 219 6 US-08-152- Se	113 5.9 41 7 US-08-050- Sequence 44, Applicatio 114 5.9 987 14 PCT-US95-0 Sequence 6, Applicatio 114 5.9 987 7 US-08-436- Sequence 6, Applicatio 114 5.9 1276 14 PCT-US95-0 Sequence 24, Applicatio 114 5.9 1276 17 US-08-222- Sequence 24, Applicati 114 5.9 1276 7 US-08-222- Sequence 24, Applicati 114 5.9 133 14 PCT-US95-0 Sequence 18, Applicati 116 5.7 219 6 US-08-525- Sequence 31, Applicati 110 5.7 219 6 US-08-225- Sequence 2, Applicatio 110 5.5 595 5 US-08-225- Sequence 2, Applicatio 110 5.5 1111 7 US-08-317- Sequence 2, Applicatio 110 5.5 1113 7 US-08-317- Sequence 13, Applicati 110 5.4 219 6 US-08-152- Sequence 32, Applicati 110 5.4 219 6 US-08-152- Sequence 33, Applicati 110 5.4 219 6 US-08-152- Sequence 32, Applicati 110 5.4 219 6 US-08-152- Sequence 32, Applicati	7 US-08-144 Sequence 4, Applicatio 5 US-08-162 Sequence 18, Applicati 5 US-08-162 Sequence 12, Applicati 7 US-08-050 Sequence 6, Applicati 14 PCT-US95-0 Sequence 6, Applicatio 7 US-08-436 Sequence 6, Applicatio 14 PCT-US95-0 Sequence 24, Applicatio 14 PCT-US95-0 Sequence 24, Applicatio 17 US-08-222 Sequence 24, Applicatio 18 PCT-US95-0 Sequence 31, Applicatio 19 US-08-152 Sequence 31, Applicatio 19 US-08-152 Sequence 13, Applicatio 19 US-08-317 Sequence 15, Applicatio 19 US-08-317 Sequence 13, Applicatio 19 US-08-317 Sequence 32, Applicatio 19 US-08-152 Sequence 32, Applicatio 19 US-08-152 Sequence 33, Applicatio

ALIGNMENTS

888888888888888	88888888888888888	# % # % 888888	RESULT ID P
CLASSIFICATION: CLASSIFICATION DATA: PRIOR APPLICATION NUMBER: US 08/122,796 FILING DATE: 16-SEP-1993 PRIOR APPLICATION NUMBER: US 08/012,269 FILING DATE: 01-FEB-1993 PRIOR APPLICATION NUMBER: US 07/922,996 FILING DATE: 01-FUB-1993 PRIOR APPLICATION NUMBER: US 07/922,996 FILING DATE: 30-7UL-1992 PRIOR APPLICATION NUMBER: US 07/267,577 FILING DATE: 07-NOV-1988 ATTORNEY/AGENT INFORMATION: NAME: Michaels, Christopher A	NUMBER OF INVENTION: Receptor 4-1BB NUMBER OF SEQUENCES: 10 CORRESPONDENCE ADDRESS: ADDRESSE: Barnard, Brown & Michaels STREET: 306 East State Street, Suite 220 CITY: Ithaca STATE: NY COUNTRY: USA ZIP: 14850 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC COMPATIBLE COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION NUMBER: PCT/US96/03965 FILING DATE:	8, Application PC/TUS960: 8, Application PC/TUS960: INFORMATION: INFORMATION: CANT: Kwon, Byoung Se CANT: Kang, Chang-Yuil OF INFENTION: MONOCIONA OF INFENTION:	LT 1 PCT-US96-03965-8 STANDARD; PRT; 255 AA. **********************************

```
688888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8888888888888
                                                                                                                                                                                                                                                                                                                          SXEXEXS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                     Sequence 8, Application US/08236918A.
                                                                                                                                                                                                                                                                                                                                                                               01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-236-918A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Power Macintosh
OPERATING SYSTEM: Apple 7.5.3
SOFTWARE: Microsoft Word, Version #6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/236,918A
FILING DATE: 06-May-1994
                                                                                                                                                                                                                                                                                                               Sequence 8, Application US/08236918A Patent No. 5674704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                 Patent No.
GENERAL IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 100.0%;
Local Similarity 100.0%;
les 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: 607-273-1711
TELEPAX: 607-273-2609
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 34,390
REFERENCE/DOCKET NUMBER: WITELECOMMUNICATION INFORMATION:
TELEPHONE: 607-273-1711
                                                                                                                                                                                                       ADDRESSEE: Kathryn A
                                                                                                                                                                                                                                                         APPLICANT: Alderson, Mark R. APPLICANT: Goodwin, Raymond APPLICANT: Smith, Craig A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: protein 
TENCE 255 AA; 27899 MW; 331875 CN;
                                                                                                                                                                                                                                  TITLE OF INVENTION: Cytokine Designated 4-1BB Ligand NUMBER OF SEQUENCES: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CSCREPEEEEGCEL 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CSCRFPEEEEGCEL 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
         FILING DATE: 06-May-
CLASSIFICATION: 435
RIOR APPLICATION DATA:
                                                                                                                                         ZIP:
                                                                                                                                                                CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                       COUNTRY:
APPLICATION NUMBER:
                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                 INFORMATION:
                                                                                                                                            98101
                                                                                                                                                                                          E: Kathryn A. Anderson 51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255 amino acids
                                                                                                                                                       SD
                                                                                                                                                                                                                                                                       Raymond G.
US 08/060,843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1925; DB 15;
Pred. No. 4.99e-158;
0; Mismatches 0;
                                                                                                                                                                                                       Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KW05
                                                                                                                                                                                                         Immunex Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
THE SECOND SECON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Anderson, Kathryn A.
REGISTRATION NUMBER: 32,172
REFERENCE/DOCKET NUMBER: 2801
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 587-0430
TELEFAX: (206) 233-0644
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 255 amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 6, Application US/08236918A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-236-918A-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein SEQUENCE 255 AA; 27899 MW; 331875 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application US/08236918A Patent No. 5674704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match 100.0%;
Local Similarity 100.0%;
hes 255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>س</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                APPLICANT: Alderson, Mark R.
APPLICANT: Goodwin, Raymond G.
APPLICANT: Smith, Craig A.
TITLE OF INVENTION: Cytokine Designated 4-1BB Ligand
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
                     ZIF: 98101
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Power Macintosh
OPERATING SYSTEM: Apple 7.5.3
SOFTWARE: Microsoft Word, Version #6.0.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PGHSPQIISFFLALTSTALLELLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCDICROCKGYFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGNSCYNIVATLLLYLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                  STREET: 51 Uni
                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                            STATE:
     APPLICATION NUMBER:
                                                                                                                                                                                                                                         Washington
                                                                                                                                                                                                                                                                                        E: Kathryn A. Anders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-May-1993
N: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
  US/08/236,918A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1925; DB 7;
Pred. No. 4.99e-158;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2801-B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
```

0;

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     888888888888888888888
                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: protein SEQUENCE 256 AA; 27598 MW; 347415 CN;
                                                                                                                                                                                                                                                                                                                         PCT-US96-03965-2
                                                                                                                                                                                                                                             Sequence 2, Application PC/TUS9603965
                                                                                                                                                                                                                                                                                                XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                          180 G-GHSLQVLTLFLALTS-ALLLALIFITLLFSVLKWIRKKFPHIFKQPFKKTTGAAQEED 237
                                                                                                                                                                                                        Sequence 2, Application PC/TUS9603965 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                       238 ACSCRCPQEEEGG 250 : | | | | | | | | | | |
                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MGNSCYNIVATILLULNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MGNNCYNVVVIVLLLVGCEKVGAVQNSCDNCQPGTFCRKY-NPVCKSCPPSTFSSIGGQP 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 01
FILING DATE: 07-May-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Anderson, Kathryn J
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatil
OPERATING SYSTEM: PC-DOS.
                                                                                                  NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSE: Barnard, Brown & Michaels
STREET: 306 East State Street, Suite
                                                                                                                                               APPLICANT: Kwon, Byoung Se
APPLICANT: Kwon, Chang-Yuil
TITLE OF INVENTION: Monoclonal antibody against human
TITLE OF INVENTION: receptor 4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 256 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                             EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLGTFNDQNGTGVCRPWTNCSLDGRSVLKTGTTEKDVVCGPPVVSFSPSTTISVTPEGGP 179
                                                                                                                                                                                                                                                                                                                                                                           GCSCRFPEEEEGG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCNICRVCAGYFRFKKFCSSTHNAECECIEGFHCLGFPQCTRCEKDCRPGQELTKQGCKTC 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: ami
                                                                                    STREET: 306 E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Anderson, Kathryn A. REGISTRATION NUMBER: 32,172 REFERENCE/DOCKET NUMBER: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 0
CLASSIFICATION:
                                                   ZIP: 14850
                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58.0%;
ilarity 57.3%;
Conservative
                                                                             Ϋ́Υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (206)
                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (206) 587-0430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-May-1994
                                                                                                                                                                                                                                                                                                                         STANDARD;
 PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1116; DB 7;
Pred. No. 2.44e-86;
49; Mismatches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08/060,843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2801-B
                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                      Suite 220
                                                                                                                                                                                                                                                                                                                         256 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             239
```

```
8X EX EX BX 9 9 9 9 9 9 9 9
                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                              Sequence 6, Application US/08089458B.
                                                                                                                                         01-JAN-1900
                                                                                                                                                                                               US-08-089-458B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
Sequence 6, Application US/08089458B
Patent No. 5359039
GENERAL INFORMATION:
APPLICANT: Smith, Craig
APPLICANT: Goodwin, Raymond
TITLE OF INVENTION: Isolated Poxvirus A53R-Equivalent
TITLE OF INVENTION: Necrosis Factor Antagonists
                                                                                                                                                                                                                                                      240 GCSCRFPEEEEGG 252
                                                                                                                                                                                                                                                                                                         180 EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEED
                                                                                                                                                                                                                                                                                                                                                             121 CFGTFNDQK-RGICRPWINCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR 179
                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / Match 58.0%;
Local Similarity 57.3%;
les 145; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 607-273-2609
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MGNNCYNVVVIVLLLVGCEKVGAVQNSCDNCQPGTFCRKY-NPVCKSCPPSTFSSIGGQP 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 34,390
REFERENCE/DOCKET NUMBER: KW
TELECOMMUNICATION INFORMATION:
TELEPHONE: 607-273-1711
TELEFAX: 607-273-2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 07/267, FILING DATE: 07-NOV-1988
ATTORNEY/AGENT INFORMATION:
NAME: Michaels, Christopher A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: protein
NENCE 256 AA; 27598 MW; 347415 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 30-JUL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                        ACSCRCPQEEEGG
                                                                                                                                                                                                                                                                                                                          G-GHSLQVLTLFLALTS-ALLLALIFITLLFSVLKWIRKKFPHIFKQPFKKTTGAAQEED 237
                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                         SLGTFNDQNGTGVCRPWINCSLDGRSVLKTGTTEKDVVCGPPVVSFSPSTTISVTPEGGP 179
                                                                                                                                                                                                                                                                                                                                                                                                                                               NCNICRYCAGYFRFKKFCSSTHNAECECIEGFHCLGPQCTRCEKDCRPGQELTKQGCKTC 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 256 amino acids TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08 FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 08 FILING DATE: 16-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                              250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-JUL-1992
                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/267,577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US 07/922,996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us 08/012,269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT/US96/03965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1116; DB 15;
Pred. No. 2.44e-86;
49; Mismatches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08/122,796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KW05
                                                                                                                                                                                               PRT;
                                                                                                                                                                                               186
                                                                                                                                                                                               Ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 4;
               Tumor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

```
RESULT
ID US
  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-292-549-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE 186 AA; 20372 MW; 170907 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/08292549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1900
                                                                                                                                                                                                                                                                                                                             Patent No. 5404550

GENERAL INFORMATION:
GENERAL Smith, Craig A.
GENERAL Smith, Craig A.
GENERAL SMITH SMITH
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application US/08292549 Patent No. 5464938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110 QNSKCSCLPGWFC-ATDSSKTE-DCRDC--IPKRKC-PCGYFGGIDELGNPLCKS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82 SNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC-CFGTFNDQKRGICRP 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51 CNRCPPGEFAKIRCSGSDNTKCERCPPHTYTTVPNYSNGCHQCRKCPTGSFDKVK-CTGT 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGG-QRTCDICRQC-KGVFRTRKECSST 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity les 36; Conser
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Apple Operating System 7.1
SOFTWARE: Microsoft Word, Version #5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                    APPLICANT: Smith, Craig A.

APPLICANT: Goodwin, Raymond G.

TITLE OF INVENTION: Isolated Viral Protein TNF
NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 186 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 26
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 587-0430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Perkins, Patricia A, 63
REGISTRATION NUMBER: 34,633
                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                     COUNTRY: U
                                                                                                                                            CITY: Seattle
STATE: Washington
                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (206) 233-0644
TELEX: 756822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: U. FILING DATE: 07/09/93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Seattle
                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10.1%;
ilarity 31.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington
                                                                                                                                                                                                E: Immunex Corporation
51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51 University Street
                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patricia Anne Perkins, Immunex Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/089,458B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 194; DB 4;
Pred. No. 3.39e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ه</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                        Antagonists
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
```

```
δÃ
 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application PC/TUS9102207.
                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT-US91-02207-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                      XXXXXX
                                                                                                                                                                                                                                                                          Sequence 4, Application PC/TUS9102207
GENERAL INFORMATION:
APPLICANT: Smith, Craig A.
APPLICANT: Goodwin, Raymond G.
TITLE OF INVENTION: Isolated Viral Protein Cytokine Antagonists
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100 RDRVCDCSAGNYCLLKGQEGCRICAPKTK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40 CTSCPPGSYASRLCGPGSDTVCSPCKNETFTASTNHAPACVSCRGRCTGHLSESQSCDKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (206) 587-0430
TELEFAX: (206) 233-0644
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                      APPLICATION NUMBER: PCT/US91/02
FILING DATE: 199.0329
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Wight, Christopher L.
REGISTRATION NUMBER: 31,680
REFERENCE/DOCKET NUMBER: 2602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/9
FILING DATE: 10/19/92
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein SENCE 326 AA; 35208 MW; 586550 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 326 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Perkins, Patricia A.
REGISTRATION NUMBER: 34,693
REFERENCE, DOCKET NUMBER: 26
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION: TELEPHONE: (206) 587-0430
                                                                                                            SOFTWARE: PatentIn Release #1.24
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1 CURRENT APPLICATION DATA:
                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                           STREET: 51 University Street
                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/292,549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 9.5%;
Similarity 31.5%;
28; Conservative
                                                                                                                                                                                          9810
                                                                                                                                                                                                               Washington
                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                    Immunex Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                PCT/US91/02207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07/963,330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 183; DB 5; Le
Pred. No. 2.46e-06;
20; Mismatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2602-A
                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                             326 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŗ
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            នួននួននួន
                    Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Application PC/TUS9102207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US91-02207-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application PC/TUS9102207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 RDRVCDCSAGNYCLLKGQEGCRICAPKTK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.5%;
Local Similarity 31.5%;
hes 28; Conservation
                                                                                                                         TELEFAX: (206) 587-060
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: (SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28 CSNCPAGTE----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40 CTSCPPGSYASRLCGPGSDTVCSPCKNETFTASTNHAPACVSCRGRCTGHLSESQSCDKT 99
49 ASRLCGPGSNTVCSPCEDGTFTASTNHAPACVSCRGPCTGHLSESQPCDRTHDRVCNCST 108
                      Local Similarity les 25; Conser
                                                                 TOPOLOGY: linear MOLECULE TYPE: prof
                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.24
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Smith, Craig A.
APPLICANT: Goodwin, Raymond G.
TITLE OF INVENTION: Isolated Viral Protein Cytokine Antagonists
NUMBER OF SEQUENCES: 4
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Wight, Christopher L
REGISTRATION NUMBER: 31,68
                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 26
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                  APPLICATION NUMBER: POFILING DATE: 19910329
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                 CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                LENGTH:
                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                             98101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LE TYPE: protein
326 AA; 35208 MW; 586550 CN;
                    9.0%;
larity 31.3%;
Conservative
                                                                                                     AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                         E: Immunex Corporation
51 University Street
                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                        (206) 587-0430
206) 587-0606
SEQ ID NO: 2:
                                                                   protein
35132 MW; 591446 CN;
                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                            PCT/US91/02207
                    Score 174; DB 10; 1
Pred. No. 1.23e-05;
15; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 183; DB 10;
Pred. No. 2.46e-06;
                                                                                                                                                                                                31,680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20; Mismatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                        2602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                         Length 325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 326;
                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

```
RESULT 10
ID US-08-292-549-6
                                       δÃ
                                                             밁
                                                                                 δõ
                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                          Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-292-549-2
                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08292549
                                                            109 GNYCLLKGQNGCRICAPQTK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/08292549 Patent No. 5464938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patent No.
                                                                                                                          Match 9.0%;
Local Similarity 31.3%;
les 25; Conservative
                                        91 GFHCL--G-AGCSMCEQDCK 107
                                                                                 33 AGTFCDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSSTSNAECDCTP 90
                                                                                                     49 ASRLCGPGSNTVCSPCEDGTFTASTNHAPACVSCRGPCTGHLSESQPCDRTHDRVCNCST 108
                                                                                                                                                                                                                                 TELEFAX: (206) 233-06. INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Smith, Craig A.
APPLICANT: Goodwin, Raymond G.
TITLE OF INVENTION: Isolated Viral Protein TNF Antagonists
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                                                                                                    MOLECULE TYPE:
JENCE 325 AA;
                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 325 amino acids
                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 0
FILING DATE: 10/19/92
                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GNYCLLKGQNGCRICAPQTK 128
                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                     NAME: Perkins, Patricia A. REGISTRATION NUMBER: 34,69
                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                          linear
                                                                                                                                                                    protein
35132 MW;
                                                                                                                                                                                                                                                       (206)
                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                            233-0644
                                                                                                                                                                                                                                                       587-0430
                                                                                                                                                                                                                                                                                                                                                                        US/08/292,549
                                                                                                                                                                                                                                                                                                                               07/963,330
                                                                                                                         Score 174; DB 5; Le
Pred. No. 1.23e-05;
15; Mismatches 35;
                                                                                                                                                                                                                                                                                   34,693
                                                                                                                                                                     591446 CN;
                                                                                                                                                                                                                                                                            2602-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                             Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          325 AA
                                                                                                                                               Length 325;
                                                                                                                           Indels
                                                                                                                           S.
                                                                                                                           Gaps
                                                                                                                           4;
```

STANDARD;

PRT;

355 AA.

```
RESULT
LID PO
XXX
XXX
XX
XX
DDT 01
XXX
CCC
XXX
CCC
XXX
CCC
XXX
                                                                                                                                                                                                밁
                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                        Sequence 2, Application PC/TUS9612374.
                                                                          01-JAN-1900
                                                                                                  XXXXX
                                                                                                                                                                                                                                                                                  t Local Similarity 34.9%;
                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                         PCT-US96-12374-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 6, Application US/08292549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  xxxxx
              Sequence 2, Application PC/TUS9612374 GENERAL INFORMATION:
                                                                                                                                                                                    102 TTHNRICDCAPGYYCFLKGSSGCKAC 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 6, Application US/08292549 Patent No. 5464938
                                                                                                                                                                        90
                                                                                                                                                                                                                       28 CSNCPAGTF----CDNNRN-QI-CSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECS 79
                                                                                                                                                                                                                                             42 CLSCPPGTYASRLCDSKTNTNTQCTPCASDTFTSRNNHLPACLSCNGRCDSNQVETRSCN 101
                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (206) 233 0644
INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS:
LENGTH: 355 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
UENCE 355 AA; 39008 MW; 711992 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Smith, Craig A.
APPLICANT: Goodwin, Raymond G.
TITLE OF INVENTION: Isolated Viral Protein TNF Antagonists
NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/98
FILING DATE: 10/19/92
ATTORNEY/AGENT INFORMATION:
 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Immunex Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                        STSNAECDCTPGFHC-L-GA-GCSMC 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 51 Uni
                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 34,693
REFERENCE/DOCKET NUMBER: 2602-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: UZIP: 9810:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: Washington
                                                                                                                                                                                                                                                                        30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Perkins, Patric
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
 Northwestern University
                                                                                                                                                                                                                                                                                                                                                                                                                       (206) 587-0430
                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07/963,330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/292,549
                                                                                                                                                                                                                                                                   Score 163; DB 5; Length 355;
Pred. No. 8.63e-05;
21; Mismatches 24; Indels 11; Gaps
                                                                                                                                                                                                                                                                                                                                                                                               6:
                                                                                                                         PRT;
                                                                                                                         283 AA.
```

```
RESULTANCE OF SOLUTION OF SOLU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 8.4%;
Best Local Similarity 30.7%;
Matches 23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 7, Application US/08097827.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-097-827-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                                                    Sequence 7, Application US/08097827 Patent No. 5457035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 CIVQDGDHCA-ACRR 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94 CLGAGCSMCEQDCKQ 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: NOTTHIUD, Thomas E.
REGISTRATION NUMBER: 33,268
REFERENCE/DOCKET NUMBER: NOR3
TELECOMMUNICATION INFORMATION:
TELEPHONE: (312) 616-5400
TELEFAX: (312) 616-5460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                APPLICANT: Goodwin, Ray
APPLICANT: Fanslow, William
APPLICANT: Gayle, Richard
TITLE OF INVENTION: No. 5457035el Cytokine Which is a Ligand
TITLE OF INVENTION: 0X40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 283 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS: Dressler, Goldsmith, Milnamow & Katz, Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Herpes Virus Entry Mediator NUMBER OF SEQUENCES: 5
                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 180 N. CITY: Chicago
                                                                                                        STREET:
                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/US96/12374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                          COUNTRY:
                                                                                                                                  ADDRESSEE:
98101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZE TYPE: protein
283 AA; 30519 MW; 429998 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60601
                                                                WA
                                                                                     Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Illinois
                                                                                                        51 University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180 N. Stetson, Suite 4700
                                                                                                                                                                                                                                                                                                                  Baum, Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U.S.A.
                                                                                                        Immunex Corporation University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 162; DB 15;
Pred. No. 1.03e-04;
16; Mismatches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOR3446P020PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 283;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                             for
```

4.

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                 Sequence 11, Application US/08097827.
                                                                                                                                                                                                                                                                                                                         01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                         US-08-097-827-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                       155 DVVC 158
                                                                                                                                                                                                                                                 Patent No. 5457035
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                           Sequence 11,
                                                                                                                                                                                                                                                                                                                                                                                                                                              161 DAVC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111 ----PR--QDS--GYKLGV-DCVPCPPGHFSPGNNQACKPWTNCTLSGKQTRHPASDSL 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37 CDNNRNQICSPCPPNSESSAGGQRTCDICRQC--KGVERTRKECSSTSNAECDCTPGFHC 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52 CDHTRDTLCHPCETGFYNEAVNYDTCKQCTQCNHRSGSELKQNCTPTQDTVCRCRPGTQ- 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95 LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 7.3%;
Local Similarity 30.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                            APPLICANT: Goodwin, Ray
APPLICANT: Fanslow, William
APPLICANT: Gayle, Richard
TITLE OF INVENTION: No. 5457035el Cytokine Which is a Ligand
TITLE OF INVENTION: OX40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: protein ENCE 206 AA; 22939 MW; 232405 CN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: PERKINS, PATRICIA A.
REGISTRATION NUMBER: 34,693
REFERENCE/DOCKET NUMBER: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                    NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: 206-587-0730
            CURRENT APPLICATION DATA:
                                                                                                         STREET: 51
                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/097,827 FILING DATE: CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
                                                                                           COUNTRY:
                                                                                                      STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
APPLICATION NUMBER:
                                                                                                                                         ADDRESSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38; Conservative
                                                                                 98101

    Application US/08097827
5457035

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: Floppy disk
                                                                                                      WA
                                                                                                                              51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              206 amino acids
                                                                                            USA
                                                                                                                                                                                                                                       Baum, Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                           Immunex Corporation
                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
US/08/097,827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 140; DB 5; Le
Pred. No. 4.69e-03;
21; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 :
                                                                                                                                                                                                                                                                                                                                                                         438 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                         for
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 7.3%;
Best Local Similarity 30.6%;
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                         Sequence 10, Application US/08162809
                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-162-809-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 DVVC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161 DAVC 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95 LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37 CDNNRNQICSPCPPNSFSSAGGQRTCDICRQC--KGVFRTRKECSSTSNAECDCTPGFHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52 CDHTRDTLCHPCETGFYNEAVNYDTCKQCTQCNHRSGSELKQNCTPTQDTVCRCRPGTQ- 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
         ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-LJ 9503
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
                                                                                                                                                                                    STREET: %,,
STREET: %AD Diego
CTATE: California
"Thited St
                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: 206-587-0730
                                                                                                CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                           TITLE OF INVENTION: NO TITLE OF INVENTION: NUMBER OF SEQUENCES: 20 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION: NAME: Perkins, Patricia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Perkins, Patricia A. REGISTRATION NUMBER: 34,693 REFERENCE/DOCKET NUMBER: 2806
                                                                          FILING DATE:
CLASSIFICATION:
                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                            COUNTRY: United States of America ZIP: 92122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: CLASSIFICATION:
                                                                                                                      SOFTWARE:
                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JLE TYPE: protein
438 AA; 49029 MW; 1097666 CN;
                                                                                                                                                                                                                                                                                                                       0, Application US/08162809
5457048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           438 amino acids
                                                                                                                                                                                                                     E: CAMPBELL AND FLORES
4370 La Jolla Village Drive,
 (619) 535-8949
                                                                                                                  PatentIn Release #1.0, Version #1.25
                                                                                                                                                      Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                     NUCLEOTIDE SEQUENCES, AND METHODS OF 26
                                                                                                US/08/162,809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 140; DB 5;
Pred. No. 4.69e-03;
21; Mismatches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                           973
                                                                                                                                                                                                                      Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
```

10:

```
9888888888888888888
                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 និនិនិនិនិនិ
Query Match 7.0%; Score 134; DB 5; Best Local Similarity 35.7%; Pred. No. 1.30e-02; Matches 25; Conservative 15; Mismatches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 7.0%;
Best Local Similarity 35.7%;
Matches 25; Conservative
                                                                                                      COUNTAL

ZIP: 92122

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25

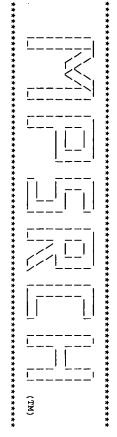
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/162,809
FILING DATE:
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: P-LJ 9503
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-8949
INFORMATION FOR SEQ ID NO: 14:
CPONTENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 973 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE 973 AA; 107980 MW; 4944642 CN;
                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14, Application US/08162809.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-162-809-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14, Applicat Patent No. 5457048 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304 ADSACTSVPS 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 SNAECDCTPG 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23 SLQDP-CSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQRTCDICRQCKGVFRTRKECSST 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                         TOPOLOGY: linear
MOLECULE TYPE: protein
JENCE 988 AA; 109578 MW; 5106875 CN;
                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 988 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Pasquale, Elena B.
APPLICANT: Sajjadi, Fereydoun G.
TITLE OF INVENTION: NOVEL EPH-RELATED TYROSINE KINASES,
TITLE OF INVENTION: NUCLEOTIDE SEQUENCES, AND METHODS OF USE
NUMBER OF SEQUENCES: 26
                                                                                                                                                                                                                                                                                                                                                                   STREET: 4370 La Jo
CITY: San Diego
STATE: California
                                                                                                                                                                                                                                                                                                                                                         COUNTRY: United States of America
                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4, Application US/08162809
5457048
                                                                                                                                                                                                                                                                                                                                                                                              4370 La Jolla Village Drive,
                                                                                                                                                                                                                                                                                                                                                                                                            CAMPBELL AND FLORES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 134; DB 5; Le
Pred. No. 1.30e-02;
15; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             988 AA
                                                                                                                                                                                                                                                                                                                                                                                               Suite 700
  23;
                        Length 988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 973;
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
  7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5.
```

```
밁
                                                                          δÃ
                                                                                                        닭
                                        304 ADSACTSVPS 313
                                                                                                250 AMKDTQCQACGPGTFKSKQGEGPCSPCPPNSRTTAGAATVC-ICR--SGFFRA--D-ADP 303 :: | | | | : | : : : | | | | | | | | : : :
82 SNAECDCTPG 91
                                                                              23
                                                                            SLQDP-CSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQRTCDICRQCKGVFRTRKECSST 81
```

Search completed: Tue Mar 24 17:05:21 1998 Job time : 30 secs.

δÃ

Ŕ



Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.

MPsrch_pp protein - protein database search, using Smith-Waterman algorithm

Mar output not generated. Tue Mar 24 17:00:16 1998; MasPar time 7.76 Seconds 456.514 Million cell updates/sec

Sequence: Description: Perfect Score: Title: >US-08-236-918A-8 (1-255) from 5674704.pep 1925

MGNSCYNIVATLLLVLNFER.....QEEDGCSCRFPEEEEGGCEL 255

Scoring table: PAM 150 Gap 11

Searched: 111726 seqs, 13889129 residues

Post-processing: Minimum Match 0% Listing first 45 summaries

Database:

a-genessq30
1:part1 2:part2 3:part3 4:part4 5:part5 6:part6 7:part7
8:part8 9:part9 10:part10 11:part11 12:part12 13:part13
14:part14 15:part15 16:part16 17:part17 18:part18
19:part19 20:part20 21:part21 22:part22 23:part23

Statistics: Mean 32.592; Variance 147.726; scale 0.221

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

esult No.	Score	Query Match	Length	DB	ID	Description	Pred. No.
ш	1925	100.0	255	12	R64197	Human 4-1BB polypepti	7.29e-167
2	1925	100.0	255	13	R70977	H4-1BB receptor prote	7.29e-167
ω	1897	98.5	255	18	W04174	Human receptor H4-1BB	3.21e-164
4	1871	97.2	255	13	R74087	Human receptor induce	9.13e-162
տ	1116	58.0	256	19	W04173		
σ	1116	58.0	256	12	R64199	Murine 4-1BB polypept	8.27e-91
7	1116	58.0	256	3	R70978	4-1BB receptor protei	
&	199	10.3	260	4	R20814	T lymphocyte-specific	1.58e-07
9	199	10.3	260	18	R91441	Human CD27 antigen.	1.58e-07
10	194	10.1		11	R62655	Cowpox virus Pst I/Cl	4.09e-07
11	183	9.5		5	R85072	Myxoma virus T2 prote	3.26e-06
12	183	9.5		σ	R27866	Myxoma virus T2 prote	3.26e-06
13	174	9.0		15	R85071	Shope fibroma virus T	
14	174	9.0	325	σ	R27865	Rabbit fibroma virus	1.75e-05
15	163	8.5		15	R85073	Cowpox virus T2-equiv	1.34e-04
16	162	8.4	283	21	W05809	Human tumour necrosis	1.61e-04
17	162	8.4	283	20	W12659	Human herpes simplex	1.61e-04
18	158	8.2	197	23	W23220	Extracellular domain	3.35e-04
19	153	7.9	145	20	R99930	Osteoclastogenesis in	8.33e-04
20	147	7.6	417	Ŋ	R27736	Sequence transcribed	2.47e-03

Query Match 100.0%; Best Local Similarity 100.0%; Matches 255; Conservative

Score 1925; DB 12; Length 255; Pred. No. 7.29e-167; O; Mismatches 0; Indels 0

Indels 0;

Gaps

0

tcdicrqckgvfrtrkecsstsnaecdctpgfhclgagcsmceqdckggqeltkkgckdc 120 TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC 120

Ş 밁 δÃ В δÃ В

> 61 61

141 7.3 154 20 R99929 Mutated OCIF, OCIF-CD 140 7.3 187 20 R99925 Mutated OCIF, OCIF-CD 140 7.3 197 20 R99945 Mutated OCIF, OCIF-CD 140 7.3 206 16 R81881 Mouse type-II membran 140 7.3 206 16 R81881 Mutated OCIF, OCIF-CD 141 7.3 277 15 R79904 ACT-4 cell surface re 141 7.3 277 15 R79904 Mutated OCIF, OCIF-CD 140 7.3 321 20 R99949 Mutated OCIF, OCIF-CD 140 7.3 321 20 R99940 Mutated OCIF, OCIF-CD 140 7.3 351 20 R99941 Mutated OCIF, OCIF-CD 140 7.3 351 20 R99943 Mutated OCIF, OCIF-CD 140 7.3 360 20 R99938 Mutated OCIF, OCIF-CD 140 7.3 390 20 R99938 Mutated OCIF, OCIF-CD 140 7.3 390 20 R99934 Mutated OCIF, OCIF-CD 140 7.3 391 20 R99934 Mutated OCIF, OCIF-CD 140 7.3 401 20 R99934 Mutated OCIF, OCIF-CD 140 7.3 401 20 R9993 Mutated OCIF, OCIF-CD 150 7.2 359 20 R9993 Mutated OCIF, OCIF-CD 150 7.	45	44	43	42	41	40	39	38	37	36	ω 5	34	33	32	31	30	29	28	27	26	25	24	23	22	17
.4 401 20 R99931 Mutated OCIF, OCIF3 187 20 R99950 Mutated OCIF, OCIF3 197 20 R99945 Mutated OCIF, OCIF3 206 16 R81881 Mouse type-II membr .3 272 20 R99944 Mutated OCIF, OCIF3 277 13 R74737 ACT-4 cell surface .3 277 15 R79904 ACT-4-h-1 receptor .3 321 20 R99940 Mutated OCIF, OCIF3 322 20 R99940 Mutated OCIF, OCIF3 326 20 R99940 Mutated OCIF, OCIF3 351 20 R99941 Mutated OCIF, OCIF3 350 20 R99938 Mutated OCIF, OCIF3 360 20 R99937 Mutated OCIF, OCIF3 390 20 R99937 Mutated OCIF, OCIF3 390 20 R99937 Mutated OCIF, OCIF3 390 20 R99948 Mutated OCIF, OCIF3 390 20 R99949 Mutated OCIF, OCIF3 390 20 R99949 Mutated OCIF, OCIF3 391 20 R99940 Mutated OCIF, OCIF3 401 20 R9993 Mutated OCIF, OCIF2 359 20 R9993 Deduced sequence en	135	139	139	140	140	140	140	140	140	140	140	140	140	140	140	140	140	141	141	140	140	140	140	141	143
20 R99931 Mutated OCIF, OCIF- 20 R99950 Mutated OCIF, OCIF- 20 R99945 Mutated OCIF, OCIF- 20 R99945 Mutated OCIF, OCIF- 21 R81881 Mouse type-II membrated Property of the first of the first ocif- 21 R99944 Mutated OCIF, OCIF- 22 R99940 Mutated OCIF, OCIF- 23 R99940 Mutated OCIF, OCIF- 24 R99941 Mutated OCIF, OCIF- 25 R99941 Mutated OCIF, OCIF- 26 R99938 Mutated OCIF, OCIF- 27 R99948 Mutated OCIF, OCIF- 28 R99949 Mutated OCIF, OCIF- 29 R99949 Mutated OCIF, OCIF- 20 R99940 Mutated OCIF, OCIF- 20 R99941 Mutated OCIF, OCIF- 20 R99942 Mutated OCIF, OCIF- 20 R99945 Mutated OCIF, OCIF- 20 R99955 Full length osteoclastog 20 R99955 Full length osteoclastog 21 R99955 Full length osteoclastog 22 R99956 Mutated OCIF, OCIF- 23 R99959 Mutated OCIF, OCIF- 24 R99959 Mutated OCIF, OCIF- 25 R99959 Mutated OCIF, OCIF- 26 R99959 Mutated OCIF, OCIF- 27 R99959 Mutated OCIF, OCIF- 28 R99959 Mutated OCIF, OCIF- 29 R99959 Mutated OCIF, OCIF- 20 R99959 Mutated OCIF, OCIF-		٠						٠	٠			٠		٠	٠							٠			
R99929 OSTECOLER OCIF OCIF R99929 OSTECOLORS OCIF OCIF R99945 MUTATED OCIF OCIF R99945 MUTATED OCIF OCIF R99946 MUTATED OCIF OCIF R99940 MUTATED OCIF OCIF R99940 MUTATED OCIF OCIF R99941 MUTATED OCIF OCIF R99941 MUTATED OCIF OCIF R99941 MUTATED OCIF OCIF R99948 MUTATED OCIF OCIF R99948 MUTATED OCIF OCIF R99944 MUTATED OCIF OCIF R99942 MUTATED OCIF OCIF R99944 MUTATED OCIF OCIF R99945 MUTATED OCIF OCIF R99935 MUTATED OCIF R99935 MUTATED OCIF OCIF R99935 MUTATED OCIF R99935 Full length osteoolars ocif R81882 Plasmid pDc406/0X44 R99946 MUTATED OCIF R99939 MUTATED OCIF R99999 MUTATED																									
Mutated OCIF, OCIF- Osteoclastogenesis Mutated OCIF, OCIF- Mutated OCIF, OCIF- Mouse type-II membra Mutated OCIF, OCIF- Mutate												20	20	20	20	20	20	15	13	20	16	20	20	20	0
collastogenesis ted OCIF, OCIF- ted OCIF, OCIF- ted OCIF, OCIF- e type-II membr ted OCIF, OCIF- ted OCIF	R76996	R99939	R99946	R81882	R99925	R99932	R99933	R99934	R99942	R99948	R99357	10	50	10	10	10	in	990	47	994	188	994	995	992	993
	d sequence en	d OCIF, OCIF-	OCIF, OCIF	pDC406/0X40,	length osteocla	ted OCIF, OCIF-C	ted OCIF, OCIF-C	ted OCIF, OCIF-C	ted OCIF, OCIF-C	OCIF,	tumour	osteoc	OCIF, OCIF-	OCIF, OCIF-C	ted OCIF, OCIF-	ted OCIF, OCIF-	ted OCIF, OCIF-	4-h-1 receptor s	4 cell surface	OCIF, OCIF-	e type-II memb	OCIF, OCIF-	OCIF, OCIF-C	astogenesis i	OCIF, OCIF-

ALIGNMENTS

```
RESULT
ID RI
AC RI
                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCCCCC PTT DRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                              Human receptor H4-1BB. Receptor 4-1BB; H4-1BB, monoclonal antibody; T-lymphocyte; B-2tymphocye; B-cell; immunostimulant; cancer; autoimmune digraft rejection; therapy.
                                Homo sapiens. W09629348-A1.
                                                                                                                                                                                                       W04174 standard; W04174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and facilitate organ transplantation Claim 6; Fig.2; 36pp; English.
Claim 6; Fig.2; 36pp; English.
Human peripheral blood lymphocyte-derived cDNA was amplified by PCR using probes based on the mouse receptor protein 4-1BB gene. The PCR product was used to screen a cDNA library of activated human T-cells. The isolated cDNA (Q86126), deposited as NRRL B21131, encoded the human homolog, H4-1BB (R70977), of 4-1BB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H4-1BB receptor protein.
H4-1BB; receptor protein; immunosuppressive; autoimmune disease;
organ transplantation; cell membrane ligand.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kwon
                                                                                                                                                                         12-DEC-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel cDNA encoding human receptor protein produce the protein which is used to treat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-SEP-1994; U10457.
16-SEP-1993; US-122796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INDV ) UNIV
                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \mathbf{\mu}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                        cfgtfndqkrgicrpwtncsldgksvlvngtkerdvvcgpspadlspgassvtppapare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tcdicrqckgvfrtrkecsstsnaecdctpgfhclgagcsmceqdckqgqeltkkgckdc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mgnscynivatlilvlnfertrslqdpcsncpagtfcdnnrnqicspcppnsfssaggqr
                                                                                                                                                                                                                                                                                                                                   CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                       cscrfpeeeeggcel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95-131352/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cscrfpeeeeggcel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pghspqiisfflaltstallfllffltlrfsvvkrgrkkllyifkqpfmrpvqttqeedg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     homolog, H4-
nce 255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h 100.0%;
Similarity 100.0%;
255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q86126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INDIANA
                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1925;
Pred. No. 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                   Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 13;
1.29e-167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   auto:immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H4-1BB -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                T-cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
RESOLT RESOLUTION R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-MAR-1996; U03965.
23-MAR-1995; US-409851.
(INDV) UNIV INDIANA FOUND.
Kang C, KYON BS;
WPI; 96-443138/44.
N-PSDB; T39546.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel human receptor protein H4-IBB (W04174) has the potential to function as an accessory signaling molecule during T-cell activation and proliferation. Its manio acid sequence was deduced from a cDNA clone (T39546) isolated from activated human T-lymphocytes. Recombinant H4-IBB can be produced in transfected host cells. It is used to isolate receptor ligands, to stimulate B-cells expressing such ligands and to block H4-IBB ligand binding. A fusion protein of H4-IBB with human placental alkaline phosphatase can be used to modify immune responses. A monoclonal antibody raised against an immunoepitope (see also W04172) of H4-IBB is useful in the treatment of cancer and autoimmune diseases.
/note= "potential N-glycosylation site"
Misc_difference 149
/note= "potential N-glycosylation site"
Misc_difference 242
/note= "protein kinase phosphorylation site"
Misc_difference 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-JAN-1996 (first entry)
Human receptor induced by lymphocyte activation (ILA).
ILA; receptor inducible by lymphocyte activation; disease diagnosis; antiinflammatory.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Monoclonal antibody specific to enhance proliferation and cancer and to inhibit specific
                                                                                                                                                                                                                                                                      /note= "transmembrane
Misc_difference 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      auto:immune diseases
Disclosure; Page 36-37; 48pp;
                                                                                                                                                                                                                                                                                                                             /note= "signal peptide"
Domain 187..213
                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R74087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cscrfpeeeeggcel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mgnscynivatlllvlnfertrslqdpcsncpagtfcdnnrnqicspcppnsfssaggqr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cfgtfndqkrgicrpctncsldgksvlvngtkerdvvcgpspadlspgassvtppapare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tcdicrqckgvfrtrkecsstsnaecdctpgfhclgagcsmceqdckqgqeltkkgckdc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                "casein-kinase-II phosphorylation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . Similarity
254; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98.5%;
llarity 99.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pecific for human receptor protein 4-1BB - u
ion and activation of T-cells for treatment
specific ligand binding for treating
                                                                                                                                                                                                                                                                                                    domain"
                           phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1897; DB 18;
Pred. No. 3.21e-164;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
RESULT
ID W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGE SECTION OF SECTIO
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                          26-SEP-1996.
22-MAR-1996; UO3965.
23-MAR-1995; US-409851.
(INDV) UNIV INDIANA FOU
Kang C, Kwon BS;
WPI; 96-443138/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W04173;
12-DEC-1996 (first entry)
Mouse receptor 4-1BB.
Receptor 4-1BB; H4-1BB; monoclonal antibody; T-lymphocyte; T-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W04173 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IIA may be used to identify a host defence inflammatory response in body tissue. The IIA agents can be used to detect an IIA-mediated pathology such as atherosclerosis, autoimtune disease (rheumatoid arthritis, transplant rejection, pathogenic host defense responses to microorganism and mlignancy such as lung carcinoma. Sequence 255 AA;
                    Novel murine receptor protein 4-IBB (W04173) has the potential to function as an accessory signaling molecule during T-cell activat and proliferation. It may represent a cell surface molecule involved in T-cell-APC interactions and may also act as a B-cell costimulator. It is structurally related to members of the nerve
                                                                                                                                            auto:1mmune diseases
Disclosure; Page 32-34; 48pp; English.
                                                                                                                                                                                    Monoclonal antibody specific for human receptor protein to enhance proliferation and activation of T-cells for teancer and to inhibit specific ligand binding for treating terms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ry Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 55; Page 61; 91pp; English. ILA may be used to identify a hos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-OCT-1993; 108401.
27-SEP-1993; US-127693.
(REGC ) UNIV CALIFORNIA.
LOTZ M, SCHWARZ H;
                                                                                                                                                                                                                                                                      N-PSDB; T39541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pathology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New receptor inducible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; R74087
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9629348-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Госат
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cscrfpeeeeggcel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cfgtfndqkrgicrpwtncsldgksvlvngtkerdvvcgpspadlspgassvtppapare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pghspqiisfflaltstallfllffltlrfsvvkrgrkkllyifkqpfmrpvqttqeedg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCDICROCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tcdiwrqckgvfrtrkecsstsnaecdctpgfqwlgagcsmceqdcrqgqeltkkgckdc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95-194420/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inducible by diagnosis a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97.28;
                                                                                                                                                                                                                                                                                                                                                FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         y lymphocyte activation and treatment of inflar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
2; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e 1871; DB 13;
. No. 9.13e-162;
Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
Its
amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vation - used inflammatory
                                                                                                                                                                                               for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to develop
host defence
                                                                                                                                                                                                                      treatment
                                                                                                                                                                                                                                             4-1BB
                                                                                              activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                          ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                   used
t of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
HESULT
ACCORDANCE MANAGEMENT
ACCORDANCE MANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8666
8666
                          В
                                                                  ΔÃ
                                                                                                                   밁
                                                                                                                                                          δÃ
                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                       Query Match
Best Local:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                    Cytokine, 4-1BB ligand (4-1BB-L) - binds to cell surface receptor 4-1BB to transduce signal

A-1BB to transduce signal

Example 1; Page 44-45; 65pp; English.

The 4-1BB polypeptide (receptor) and the 4-1BB-L (cytokine, see 075422) are useful in a pharmaceutical composition for stimulating the immune system. The 4-1BB and 4-1BB-L polypeptides are also useful for exploring mechanisms of T-cell activation, as they are expressed on T lymphocytes. 4-1BB-L can be used as a tissue culture reagent for in vitro cultivation of primary T-cells during the derivation of clonal T-cell lines. It may also be used to stimulate proliferation of activated T-cells, used in therapeutic procedures.

Sequence 256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          deduced from an is homologue, H4-1BB monoclonal antiboo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 95-022265/03.
N-PSDB; Q75428.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-MAY-1994; U05036.
07-MAY-1993; US-060843.
(1MMY) IMMUNEX CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wus musculus. WO9426290-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-AUG-1995 (first entry)
Murine 4-1BB polypeptide.
T-cell; lymphocyte; activation; tissue culture; clone;
proliferation; stimulation; 4-1BB-L; ligand; receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alderson MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R64199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                         61
                                                                                                                                                                                                                                                                                    Local,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1
slgtfndqngtgvcrpwtncsldgrsvlktgttekdvvcgppvvsfspsttisvtpeggp
                                                                                               acscrcpqeeegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCSCRFPEEEEGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                               MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibody useful in cancer and 256 AA;
                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goodwin RG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     isolated cDNA clone (see also T39541). A human BB (W04174), was identified and used to raise a body useful in cancer and autoimmune disease the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                  58.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             58.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Smith
                                                                                                                                                                                                                                                            Score
Pred.
49; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
49; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                e 1116; DB 19;
i. No. 8.27e-91;
i. no. 855;
                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CA;
                                                                                                                                                                                                                                                                                  1116;
No. 8.
                                                                                                                                                                                                                                                         DB 12;
8.27e-91;
tches 55;
                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cytokine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell lines;
                                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        therapy
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                      120
                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
```

Ş 밁 Š 밁 Š

etc.

```
RESULT
AC R
AC R
DT 11
DE 4
COS 4
COS M
CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide 1..2:
/label= Sig_peptide
WO9507984-A.
23-MAR-1995.
                                                                                     R20814 standard; Protein; 260 AA.
R20814;
R20819;
21-MAY-1992 (first entry)
T lymphocyte-specific CD27 Antigen.
Rapid immunoselection cloning technique;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel cDNA encoding human receptor protein H4-1BB - useful to produce the protein which is used to treat auto:immune disease and facilitate organ transplantation
Disclosure; Fig.1; 36pp; English.
cDNA encoding the human receptor protein H4-1BB (given in Q86126)
was isolated using PCR primers based on the homologous mouse
4-1BB gene (Q86127) encoding mouse receptor protein (R70978).
Sequence 256 AA;
              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4-1BB receptor protein.
4-1BB; receptor protein; immunosuppressive; autoimmune organ transplantation; cell membrane ligand.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R70978 standard; Protein; R70978;
                                      Homo sapiens
                                                                   carcinoma antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; Q86127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kwon BS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (INDV ) UNIV INDIANA FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-SEP-1994; U10457.
16-SEP-1993; US-122796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-OCT-1995 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240 GCSCRFPEEEEGG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                          :|||| ]:|||||
                                                                                                                                                                                                                                                                                                                                                                                                                                 g-ghslqvltlflalts-alllalifitllfsvlkwirkfphifkqpfkkttgaaqeed
||| |::::||||| |||:|:|||||:|:||:||:||:::::||||
EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFWRPVQTTQEED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g-ghslqvltlflalts-alllalifitllfsvlkwirkkfphifkqpfkkttgaaqeed
||| |::::||||| |||:|:|||||:|:||||
EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                GCSCRFPEEEEGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acscrcpqeeegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95-131352/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 58.0%;
Similarity 57.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1..23
           Location/Qualifiers
                                                                      CD40.
                                                                                                                                                                                                                                                                                                                             252
                                                                                                                                                                                                                                                                                                                                                                                  250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1116; DB 13;
Pred. No. 8.27e-91;
49; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                              cell
                                                                                              surface antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
     RESULTING ACCORDANCE OF THE PROPERTY OF THE PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The mino acid sequence of CD27 was deduced from a cDNA clone cobtained from human T lymphocyte cDNA transferred into COS cells and immunoselected using the MAbs ONT18a and CLB-9F4 (see e.g. C21164 for description of the rapid immunoselection cloning method). The CD27 polypeptide demonstrates the typical features of a type I integral membrane protein. The hydrophobic membrane spanning region is followed by a cytoplasmic domain beginning with a positively charged stop transfer sequence. The deduced CD27 sequence is highly homologous to the B lymphocyte and carcinoma antigen CD40 over its entire length. CD27 is also homologous to the NGF receptor over the extracellular and transmembrane domains. There is a cysteine- and histidine-rich region in the extracellular domain which could potentially form "zinc fingers", followed by a serine, threonine and proline rich membrane proximal domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-JAN-1992.
15-JUL-1990; U04986.
13-JUL-1990; US-553759.
(GEHO-) GEN HOSPITAL CORP.
Seed B. Aruffo A. Amiot M;
WPI; 92-056864/07.
        25-FEB-1988;
25-FEB-1988;
13-JUL-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Region
/label= transmembrane
212..260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
/label=
                                                                                                                                                                                                                                                                                                                                                                                                                                          Human (1/2) Human (2/2) Cell surface antigen; cloning; immunoselection, immunoselection, immunoselection, T-lymphocyte;
                                                                                                                                                                                                                                                                                                                                                                               кеу
                                                                                                                                                                                                                                                                                                                                                                                                                                       autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human CD27 antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R91441;
31-OCT-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T 9
R91441 standard; Protein; 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; 021183.

New CD53 cell surface antigen and DNA encoding immuno-therapy and diagnosis of haematopoietic Example 13; Page 103; 160pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein
/label=
                                                                                                                     US5506126
                                                                                                                                                                                Domain
                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                             Domain
                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= extracellular
Region 192..211
                                                                                                                                                                          /label= Transmembrane_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9201049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Domain
                                                                                                                                                /label= Cytoplasmic_domain
                                                                                                                                                                                                                                                               /label=
                                                                                                                                                                                                                                                                                                                       /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= cytoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLGAGCSMCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crdkectecd 121
                                                                                                                                                                                                                                  21..91
Extracellular_domain
92..212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 h 10.3%;
Similarity 38.6%;
27; Conservative
                                                                                                                                                                                                                                                                                                                    Sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CD27_antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        signal
                                                                                                                                                                                                                                                                                                                                                                                                                              disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260 AA;
  160416.
US-160416.
US-379076.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1..20
                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21..191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21..260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 199; DB 4; Louis Pred. No. 1.58e-07; 14; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immunoselection; immunotherapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       it - for neoplasms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
```

4,

Gaps 111

4.

SCCCC PTT RAPTO

Ş 밁 Š 밁 Ş 밁 밁 Š 밁

```
ID RESULT 10
ID R62655;
AC R62655;
DT 30-JUN-
DE COMPOX
KW COMPOX
KW CUMPOX
FM US53590
PD 25-OCT-
PF 09-JUL-
                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                           Ş
                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of diagnostic and therapeutic proteins

Example 13; Column 67-68; 79pp; English.

The amino acid sequence (R91441) of human antigen CD27 was deduced come and cone (T1472) derived from T-lymphocyte cells. CD27

Was expressed in COS cells following construction of a cDNA collaborary and immunoselection using monoclonal antibodies OKT18a and collaborary and immunoprecipitated from the transfected COS cells cusing anti-CD27 antibodies. CD27 is a T-lymphocyte activation cantigen. A fusion protein of CD27 and a receptor ligand will be cuseful in detecting the presence of a particular antigen in body cludesired T-cell proliferation, e.g. in certain autoimmune diseases.

Sequence 260 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-0. (GEHO) bu... (GEHO) bu... Seed ... ToI; 96-200279/20. T14722.
                                                                                                                                                                                                                                                                                                                                                                              25-OCT-1994.
09-JUL-1993; 089458.
09-JUL-1993; US-089458.
(LMMV) IMMUNEX CORP.
GOOdwin RG, Smith CA;
                                                                                                                                                                                           Isolated viral proteins capable of binding TNF - therefore functioning as TNF and cytokine antagonists Claim 1; Columns 21-22; 13pp; English.
Q72995 encodes R62655 a viral protein from the Pst I/Cla I fragment of the cowpox virus, which binds cytokines and tumour necrosis factor (TNF). The viral protein can be used to regulate immune response as part of a therapeutic composition, it can also be used as an antagonist of TNF.

Sequence 186 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cowpox virus.
US5359039-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-JUN-1995 (first entry)
Cowpox virus Pst I/Cla I fragment viral protein .
Cowpox virus fragment Pat I/Cla I; cytokine antagonist;
                                                                                                                                                                                                                                                                                                                                                WPI; 94-341063/42.
N-PSDB; Q72995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-JUL-1990; US-553759.
01-DEC-1992; US-983647.
18-OCT-1993; US-139273.
(GEHO ) GEN HOSPITAL COI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tumour necrosis factor; immune response regulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cloning of cDNA encoding cell surface antigen
                    110 qnskcsclpgwfc-atdsskte-dcrdc--ipkrkc-pcgyfggidelgnplcks 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                              28
                                                                                             51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         crdkectecd
                                                                                            cnrcppgefakircsgsdntkcercpphtyttvpnysngchqcrkcptgsfdkvk-ctgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLGAGCSMCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNNRNQI-CSPCPPN-SFSSAGGQRT-CDICRQCKGVFRTRKECSSTSNAECDCTPGFH
SNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC-CFGTFNDQKRGICRP
                                                            CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGG-QRTCDICRQC-KGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.3%;
Similarity 38.6%;
27; Conservation
                                                                                                                              Similarity 36; Conser
                                                                                                                            10.1%;
larity 31.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       186
                                                                                                                            Score 194; DB 11;
Pred. No. 4.09e-07;
24; Mismatches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 199; DB 18;
Pred. No. 1.58e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                              42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 260;
                                                                                                                                                          Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 useful
                                                                                                                            Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                               it can also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93
                                                                                                                              9
```

```
TRESULT
ACCORDANCE MANAGEMENT
ACCORDANCE MAN
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                               29-MAR-1991; U02207.
29-MAR-1991; WO-U22076.
(1MMY) IMMUEX CORP.
GOODWIN RG, SMITTH CA.
WPI; 92-366255/44.
N-PSDB; Q29745.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    septic shock.
Myxoma virus.
US5464938-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-APR-1996
Myxoma virus:
Myxoma virus;
                   Isolated viral proteins are cytokine (e.g. TNF) antagonists - for regulating immune response and for treating cachexia septic shock and side effects associated with cytokine therapy claim 3; Page 28; 39pp; English.

The sequence is that of myxoma virus T2 protein which acts as a TNF antagonist by binding TNF and preventing it from binding to TNF receptors. It can be used for regulating immune responses, treating cachexia or septic shock or to treat side effects associated with cytokine therapy, e.g. TNF anti-tumour therapy. It may also be used as an immunogen, a reagent in assays and as a binding agent for affinity purifications. See also R27865.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 95-402861/51.

N-PSDB; 702471.

New Soluble viral proteins that bind tumour necrosis factor - for treating cachexia, septic shock, side effects of TNF therapy etc., also useful in assays, affinity purificn. and antibody prodn. Claim 1; Columns 31-32; 21pp; English.

The myxoma virus T2 protein is a soluble viral protein which binds tumour necrosis factor (TNF), thus inhibiting TNF binding to its receptor. T2 protein is useful (when administered by injection or infusion from sustained release implants, etc.) for treating TNF associated toxicity e.g. side effects of using TNF as an antitumour agent or in cases of cachexia and septic shock where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LT 12
R27866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19-OCT-1992; US-963330. (IMMV) Immunex Corp. Goodwin RG, Smith CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Myxoma virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Polymerase chain reaction; TNF antagonist; tumour necrosis factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Myxoma virus T2 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNF production
Sequence 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tumour necrosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R85072 standard; Protein; 326 R85072;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-MAR-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-AUG-1994; 292549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 rdrvcdcsagnycllkgqegcricapktk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82 SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40 ctscppgsyasrlcgpgsdtvcspcknetftastnhapacvscrgrctghlsesqscdkt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
28; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                larity 31.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry) T2 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immunosuppressive; cytokine antagonist;
is factor antagonist; therapeutic; cache
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is excessive. AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 183; DB 15;
Pred. No. 3.26e-06;
20; Mismatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cachexia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5.
```

```
RESULTARIO 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
ID RE
AC RE
DT 10
DE S1
KW S1
KW C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rabbit fibroma virus. US5464938-A. 07-NOV-1995. 18-AUG-1994; 292549. 19-OCT-1992; US-963330. (IMMV) IMMUNEX CORP. GOOdwin RG, Smith CA WPI; 95-402861/51.
                                                                                 15-OCT-1992.
29-MAR-1991; W0-U22076.
29-MAR-1991; W0-U22076.
(IMMY) IMMUNEX CORP.
Goodwin RG, Smith CA.
WPI; 92-366255/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; T02470.

New soluble viral proteins that bind tumour necrosis factor - for treating cachexia, septic shock, side effects of TNF therapy etc., also useful in assays, affinity purificn. and antibody prodn. Claim 1; Columns 25-28; 21pp; English.

The Shope fibroma virus T2 protein is a soluble viral protein which binds tumour necrosis factor (TNF), thus inhibiting TNF binding to its receptor. T2 protein is useful (when administered binjection or infusion from sustained release implants, etc.) for treating TNF associated toxicity e.g. side effects of using TNF as an antitumour agent or in cases of cachexia and septic shock where
                                                                                                                                                                                                                                                                                                                                                               T 14
R27865 standard; Protein;
R27865;
11-MAR-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IT 13
R85071 standard; Protein;
R85071;
16-APR-1996 (first entry
                                                                                                                                                                                                                                                                                                                                11-MAR-1993 (first entry)
Rabbit fibroma virus T2 protein.
           regulating
                                                             N-PSDB; Q29744.
                                                                                                                                                                                                                                                          WO9217583-A.
                                                                                                                                                                                                                                                                                                            Polymerase chain reaction;
     Isolated viral proteins are cytokine (e.g. {\tt TNF}) antagonists regulating immune response and for treating cachexia septic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \mathbf{u}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49 asrlcgpgsntvcspcedgtftastnhapacvscrgpctghlsesqpcdrthdrvcncst 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 9.5%;
Local Similarity 31.5%;
les 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTFCDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSSTSNAECDCTP
                                                                                                                                                                                                                                                                                it fibroma virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFHCL - - G - AGCSMCEQDCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gnycllkgqngcricapqtk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctscppgsyasrlcgpgsdtvcspcknetftastnhapacvscrgrctghlsesgscdkt 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rdrvcdcsagnycllkgqegcricapktk 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
25; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ion is excessive. 325 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.0%;
llarity 31.3%;
Conservative
                                                                                                                                                                                                                                                                                                         TNF antagonist;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 174; DB 15; 1
Pred. No. 1.75e-05;
15; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 183; DB 5;
Pred. No. 3.26e-06;
20; Mismatches 32
                                                                                                                                                                                                                                                                                                                                                                                                                    AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 æ
                                                                                                                                                                                                                                                                                                            tumour necrosis factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9;
           shock
                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ű
```

Search completed: Tue

Mar

24

time

98

secs

```
HESULAN AND COCCUSTOR OF THE COCUSTOR OF THE COCCUSTOR OF
Ş
                                                                                                                     δÃ
                                                               밁
                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-AUG-1994; 292549.
19-OCT-1992; US-963330.
(IMMY) Immunex COrp.
Goodwin RG, Smith CA
WPI; 95-402861/51.
                                                                                                                                                                                                                                                                                                                                                              New Soluble viral proteins that bind tumour necrosis factor for treating cachexia, septic shock, side effects of TNF therapy etc., also useful in assays, affinity purificn. and antibody prodn. Claim 1; Columns 35-38; 21pp; English.

The cowpox virus T2-equivalent protein is a soluble viral protein which binds tumour necrosis factor (TNF), thus inhibiting TNF binding to its receptor. T2 protein is useful (when administered by injection or infusion from sustained release implants, etc.) for treating TNF associated toxicity e.g. side effects of using TNF as an antitumour agent or in cases of cachexia and septic shock where Sequence 355 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R85073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         claim 2; Page 25; 39pp; English.

The sequence is that of rabbit fibroma virus T2 protein which acts as a TNF antagonist by binding TNF and preventing it from binding to TNF receptors. It can be used for regulating immune responses, treating cachexia or septic shock or to treat side effects associated with cytokine therapy, e.g. TNF anti-tumour therapy. It may also be used as an immunogen, a reagent in assays and as a binding agent for sefunity purifications. See also R27866.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cowpox virus; immunosuppressive; cytokine antagonist; tumour necrosis factor antagonist; therapeutic; cache septic shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; T02472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US5464938-A.
07-NOV-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cowpox virus T2-equivalent protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-APR-1996
                                                      102 tthnricdcapgyycflkgssgckac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109 gnycllkgqngcricapqtk 128
                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
nes 25; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33 AGTFCDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSSTSNAECDCTP 90
STSNAECDCTPGFHC-L-GA-GCSMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFHCL -- G-AGCSMCEQDCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 asrlcgpgsntvcspcedgtftastnhapacvscrgpctghlsesqpcdrthdrvcncst 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                               Similarity
30; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.0%;
llarity 31.3%;
Conservative
                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein; 355
                                                                                                                                                                                                                                                                           8.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107
                                                                                                                                                                                                                                        Score 163; DB 15;
Pred. No. 1.34e-04;
21; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 174; DB 5; L
Pred. No. 1.75e-05;
15; Mismatches 35;
   102
                                                         127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 325
                                                                                                                                                                                                                                                                                                     Length 355;
                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ū
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                               œ
```

N.A. Title: Database: Post-processing: Scoring table: Description: Perfect Score: Tabular output Database MPsrch_nn Sequence: Comp: STD Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc. ġ. not 1:EST1 2:EST2 3:EST3 4:EST4 5:EST5 6:EST6 7:EST7 8:EST8 9:EST9 10:EST10 11:EST11 12:EST12 13:EST13 14:EST14 15:EST15 16:EST16 17:EST17 18:EST12 13:EST13 14:EST14 15:EST15 16:EST16 17:EST17 18:EST18 19:EST19 20:EST20 21:EST21 22:EST22 23:EST23 24:EST24 25:EST25 26:EST26 27:EST27 28:EST26 29:EST29 30:EST30 31:EST31 32:EST32 33:EST33 34:EST34 35:EST35 36:EST36 37:EST37 38:EST38 39:EST39 40:EST40 41:EST41 42:EST42 43:EST43 43:EST44 45:EST45 46:EST46 47:EST47 48:EST48 49:EST49 50:EST50 51:EST51 52:EST55 53:EST55 54:EST56 55:EST56 67:EST56 67:EST56 67:EST57 58:EST56 59:EST59 60:EST60 67:EST66 68:EST66 69:EST63 64:EST64 65:EST65 66:EST66 67:EST67 68:EST68 69:EST67 77:EST77 78:EST77 73:EST73 74:EST74 75:EST75 76;EST76 77:EST77 78:EST77 79:EST79 99:EST99 91:EST99 99:EST99 91:EST99 99:EST99 91:EST99 99:EST99 TABLE Gap 6 Wed n.a. database search, using Smith-Waterman algorithm Minimum (1-1415) from 5674704.seq 1415 Dbase 0; Query >US-08-236-918A-7 EST-B Listing 665703 seqs, 246912890 bases 104 EST114
109: EST1109
114: EST1119
119: EST119
1124: EST1124
119: EST1129
1124: EST1124
119: EST1129
114: EST1139
114: EST1144
1149: EST1144
1149: EST1154
1159: EST1154
1159: EST1154
1159: EST1154
1159: EST1154
1159: EST1154 generated 99:EST99 Mar 25 13:33:00 1998; MasPar time 697.53 Seconds
1001.767 Million cell updates/sec default Match T99 100:EST100 101:EST101 102:EST102 103:EST103 ST104 105:EST105 106:EST106 107:EST107 108:EST108 ST109 110:EST110 111:EST111 112:EST112 113:EST113 ST114 115:EST115 116:EST116 117:EST117 118:EST118 ST114 115:EST115 116:EST116 117:EST117 118:EST118 ST114 115:EST115 116:EST116 117:EST117 118:EST118 ST119 120:EST120 121:EST121 122:EST127 123:EST123 ST124 125:EST125 126:EST126 127:EST127 128:EST128 ST129 130:EST135 136:EST136 137:EST137 138:EST138 ST134 135:EST135 136:EST136 137:EST137 138:EST138 ST134 135:EST145 146:EST146 147:EST147 143:EST148 ST144 145:EST145 146:EST146 147:EST147 143:EST148 ST159 150:EST150 151:EST151 152:EST157 158:EST158 ST154 155:EST150 151:EST151 152:EST157 158:EST158 ST154 165:EST160 161:EST166 167:EST167 163:EST168 ST164 165:EST160 161:EST161 167:EST167 173:EST177 178:EST178 ST174 175:EST175 176:EST176 177:EST177 178:EST178 4.5 summaries × (MT)

000

O

```
179:EST179
184:EST184
189:EST189
194:EST194
 180:EST180
185:EST185
190:EST190
195:EST195
 181:EST181
186:EST186
191:EST191
196:EST196
          182:EST182
187:EST187
192:EST192
          2 183:EST183
7 188:EST188
2 193:EST193
```

Statistics: Mean 11.971; Variance 4.024; scale 2.975

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No. 11135 Query Match Length DB 396 440 230 378 87 50 164 67 148 26 63 178 97 185 N32944 5 AA113170 8 AA131088 H62775 H62775 N53968 AA081138 AA209208 AA126811 T72327 1 AA011026 1 AA172046 1 AA188423 7 AA186763 N95817 T08745 AA179163 AA102432 AA194481 N80739 H30221 H38146 N94134 R97235 T05070 H75272 R38419 N94342 T86817 H01809 R25141 N66948 R44830 Ħ HSDH25C04 AA079507 N73439 AA134241 AA190727 AA191659 AA109726 zq05d10.sl tratagene 1.60e-92 za98c06.sl Homo sapie 3.31e-90 yz31g10.rl Soares mul 3.31e-90 yz71e09.sl Homo sapie 6.79e-88 zc94c08.sl Soares ret 6.79e-88 zc95c01.sl Stratagene 9.68e-87 zn87b11.sl Stratagene 9.68e-87 zn87b11.sl Stratagene 9.68e-87 zn87b11.sl Stratagene 1.95e-84 zq43b02.sl Soares fet 1.95e-84 zq43b02.sl Stratagene 2.76e-83 yh35g09.rl Homo sapie 2.76e-83 za48b10.sl Homo sapie 3.88e-82 ym57a10.sl Homo sapie 3.88e-82 yp57a10.sl Homo sapie 3.88e-82 yr46g07.rl Homo sapie 3.88e-82 yr46g07.rl Homo sapie 3.88e-82 yr46g07.rl Homo sapie 3.88e-82 yr46g07.rl Homo sapie 3.88e-82 zr63a05.sl Stratagene 3.88e-82 zr63a05.sl Stratagene 7.63e-80 zn12d02.sl Stratagene 7.63e-80 zn24g01.sl Homo sapie 7.63e-80 zn25b01.rl Homo sapie 7.63e-80 zn25b01.rl Homo sapie 1.06e-78 yf58b09.sl Homo sapie 1.06e-78 yf58b09.sl Homo sapie 1.06e-78 yd86h07.rl Homo sapie 1.06e-78 yd86h07.rl Homo sapie 1.06e-78 H. sapiens partial cD yy10b06.sl Homo sapie 1 zm27e06.sl Stratagene zo16c04.sl Stratagene yg31d01.sl Homo sapie 1 ym54c03.sl Homo sapie 1 mp10f11.rl Life Tech mo13g01.rl Life Tech ye89b09.sl Homo sapie ye89b09.rl Homo sapie Description 1.11e-93 e 1.11e-93 e 7.62e-95 1.60e-92 1.60e-92 1.15e-100 Pred. 7.20e-165 1.15e-139 1.68e-99 .32e-109 ŏ

RESULT 1
LOCUS
DEFINITION

a

a a

ACCESSION NID

protein n AA109726 g1661789 EST.

mRNA EST 29-JAN-1997 mp10f11.r1 Life Tech mouse embryo 8 5dpc 10664019 Mus musculus cClone 568845 5' similar to gb:J04492 Mouse T-cell receptor 4-1BB protein mRNA, complete cds (MOUSE);.

CDNA

ALIGNMENTS

KEYWORDS

```
Š
                                                                                                                                                     밁
                                                                                                                                                                                 Š
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                     동
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
• 8
                                           δÃ
                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                           292
                                                                                                                                                                                                                                                                                           252
                                                                                                                                                                                                                                                                                                                               232
                                                                                                                                                                                                                                                                                                                                                                 194
                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112
              492
                                                472
                                                                                  432
                                                                                                                    412
                                                                                                                                                      372
                                                                                                                                                                                        352
                                                                                                                                                                                                                         312
                                                                                                                                                                                                                                                                                                                                                                                                172 TTGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                  aaacctgtagcttgggaacatttaatgaccagaacggtactggcgtctgtcgaccctgga
                                                                                                                                        agtgcaccagatgtgaaaaggactgcaggcctggccaggagctaacgaagcagggttgca
                                                                                                                                                                                                       gctcctctacccacaacgcggagtgtgagtgcattgaaggattccattgcttgggggccac 371
                                                                                                                                                                                                                                                                                                                                                 agaa-aatacaatccag-tctgcaagagctgccctccaagtaccttctccagcataggtg
                                                                                                                                                                                                                                                                                                                                                                                                                     gtgagaaggtgggagccgtgcagaactcctgtgataactgtcagcctggtactttctgc- 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atttcgccatgggaaacaactgttacaacgtggtggtcattgtgctgctgctagtgggct 134
                                                                                                                  GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAG
                                                                                                                                                                                                                                                         gacagccgaactgtaacatctgcagagtgtgtgtgcaggctatttcaggttcaagaagtttt 311
                                                                                                                                                                                                                                                                                                                            ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCCAAATAGTTTCTCCAGCGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTCATCATGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACT 171
            cgaactgctctctagacggaaggtctgtgcttaagaccggggaccacggagaaggacgttg
                                                AAGACTGTTGCGTTTGGGACATTTAACGATCAGAAACGT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Marra M/Mouse EST Project
Washington University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Lo
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -28M.3 rev1 from Amersham
High quality sequence stop: 399.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 610)
Marra,M., Hillier,L.,
Geisel,S., Kucaba,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The WashU-HHMI Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.3%;
larity 70.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>^</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV-SPORT2; Site_1: Sal1; Site_2: Not1;
Cloned unidirectionally. Primer: Oligo dT. 8.5dpc
embryos.pcMV-SPORT2 vector."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="Life Tech mouse embryo 8
/dev_stage="8.5dpc embryos"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="568845"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mitochondrial eukaryotes; Metazoa;
Eutheria; Rodentia; Sciurognathi; J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .>610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             146 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 174; DB 191;
Pred. No. 7.20e-165;
0; Mismatches 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ct
                                              -GGCATCTGTCGACCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5dpc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Chordata; Muridae; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106640191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                491
                                                                                                                                                     431
                                                                                                                                                                                       411
                                                                                                                                                                                                                                                                                                                                                              251
                                                                                                                                                                                                                                                                                                                                                                                                231
                                                                                                                                                                                                                                                                                                                             291
              551
                                                528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
```

٥

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
 Š
                                  밁
                                                           Š
                                                                                                                                δÃ
                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                   BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      din
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                 COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   529
                                                                                                                                   112
                                                                                                                                                                    76
                    agaa-aatacaatccag-tctgcaagagctgccctccaagtaccttctccagcataggtg
                                                                                   gtgagaaggtgggagccgtgcagaactcctgtgataactgtcagcctggtactttctgc- 194
                                                                                                                                                   atttcgccatgggaaacaactgttacaacgtggtggtcattgtgctgctgctagtgggct 135
ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTG
                                                                  TTGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG
                                                                                                                                   ATTTCATCATGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACT 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGTGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgtgttgacc 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA087107 589 bp mRNA EST 23-OCT-1996 mc13g01.r1 Life Tech mouse embryo 10 5dpc 10665016 Mus musculus cDNA clone 553488 5' similar to gb:J04492 Mouse T-cell receptor 4-1BB protein mRNA, complete cds (MOUSE);.
AA087107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g1630565
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Marra M/Mouse EST Project
Washdr-HHMI Mouse EST Project
Washington University School of Medicinep
4444 Forest Park Parkway, Box 8501, St. Lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The WashU-HHMI Mouse EST Project Unpublished (1996)
                                                                                                                                                                                                    339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: mouseest@watson.wustl.edu
This clone is available royalty-free through
IMAGE Consortium (info@lmage.llnl.gov) for fu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Te,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MGI:334280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                  10.8%;
Similarity 69.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 589)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                primer: -28M13 rev1 from Amersham h quality sequence stop: 377.
                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                      þ
                                                                                                                                                                                                                                                                                    <1..>589
a 138 (
                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pCMV-SPORT2; Site_:
Cloned unidirectionally. Primer:
embryos. pCMV-SPORT2 vector."
/clone="553488"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    598
                                                                                                                                                                                                                                                                                                                /clone_lib="Life Tech mouse embryo
/dev_stage="10.5dpc embryos"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mitochondrial eukaryotes; Metazoa; Chordata; Eutheria; Rodentia; Sciurognathi; Muridae; M
                                                                                                                                                                                                                                                                                   o
                                                                                                                                                                                                 Score 153; DB 166;
Pred. No. 1.15e-139;
0; Mismatches 144;
                                                                                                                                                                                                                                                                                   171
                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                   147
                                                                                                                                                                                                                                                                                                                                                                                      ; Site_1: bar.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Louis,
                                                                                                                                                                                                                               Length 589;
                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  further information.
                                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                                                                                                                                                                                  Salī; Site_2:
Ligo dT. 10.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LLNI;
                                                                                                                                                                                                                                                                                                                                                    5dpc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                  7;
                                                                                                                                                                                                                                                                                                                                                    10665016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Murinae;
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    . Sdpc
                                  252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     588
 291
                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                   NotI;
                                                                                                                                                                                                  7;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                    ORIGIN
                                                  BASE COUNT
                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                        EFERENCE
 Query Match
                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                      THORS
                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           552 tgtgtggacc 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529 CAAACTGTTCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGAGGGACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                373 agtgcaccagatgtgaagaggactgcaggcctggacaggaagctaacgaagcagggttgc 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412 GATGCAGCATGTGAACAGGATTGTAAACAAGGTCAAGAA-CTGACAAAAAAAGGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cgaggtgcgctctattcttatagtctgtgctaa-gaccgggaccacgggagaaggacgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aaaacctgtagcttgggaacatttaatgaccagaacgggaggtgttctgtcgaccctggg 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gctcctctacccacaacgcggagtgtgagtgcattgaaggattccattgcttggggccac 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gacagccgaactgtaacatctgcagagtgtgtgcaggctatttcaggttcaagaagtttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alu repetitive element; R06117 g756737
                                                                                                                               High qality sequence stops: 257 Source: IMAGE Consortium, LLNL for through LLNL; contact the This clone is available royalty free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                  Washington University School of Medicine 4444 Forest park Parkway, Box 8501, St. I Tel: 314 286 1800 Fax: 314 286 1810
                                                                                                                                                                                                                                                                                  Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                  The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eutheria; Primates;
1 (bases 1 to 278)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eucaryotae; Metazoa; Chordata; Vertebrata;
Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ye89b09.sl Homo sapiens cDNA clone 124889 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R06117
                                                   85
                                                                                                                                                                                                  est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           598
                                                /organism="Homo sapiens"
/clone="124889"
60 c 76 g 5
                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                  (1995)
   9
   .
0%;
 Score 127;
                                                  56
 멂
                                                  đ
                                                                                                                                                                                                                                                   St. Louis,
Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3' similar to contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gnathostomata; Mammalia, Homo.
                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411
```

```
JOURNAL COMMENT
                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ტ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                Query Match 8.5%;
Best Local Similarity 75.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1245
                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101 tttacaaaa-aaaaaatacaaaaattagctgggtgtggtggtagtgcctgtagtcccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acatgatcacatgtactccagcctgggtgacagagtgagaccctgtctcaaaanaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGGCCAAAGTGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATC 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ggaggattacttgagcttaggagtttgagaccagcctgggcaacatggccaaaaccccatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTACTAGGAGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAG 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                   Washington University School of Medicine
                                                                                                                                                                                                                                                                                Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                           Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 388)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M.,
Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M.,
Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F.,
Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ye89b09.rl Homo sapiens cDNA clone 124889 Alu repetitive element;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      188;
                                                                                                                                                                            High qality sequence stops: 312 Source: IMAGE Consortium, LLNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                             The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                            Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Eutheria; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eucaryotae; Metazoa; Chordata; Vertebrata;
                                                                                                                                            clone is available royalty-free through LLNL; contact the Consortium (info@image.llnl.gov) for further information.
                                                                          88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
   Conservative
                                                                         /organism="Homo sapiens"
./clone="124889"
a 92 c 85 g 12
                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                           Project
Score 120; DB 14; Pred. No. 1.15e-100; % Mismatches 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                       85 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 7.32e-109;
matches 50;
                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                          rt
                                                                                                                                                                                                                                                      Louis,
                             Length 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5' similar to contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo.
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gnathostomata; Mammalia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                          others
                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-APR-1995
 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1186
```

밁

134 ttttttttttttttgagacagggtctcactctgtcacccaggctngagtacagtgatgtg 193

```
ဌ
                                                                                                                                           ç
                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
RESULT
LOCUS
                                                                                                                   용
                                                                                                                                                                  밁
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                             မှ
                                                                     밁
                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSION
                                                                                                                                                                                                                                                     ery Match
                                                                                                                                                                                                                                         tches
                                                                                             1176
                                                                                                                                         1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1119
                                                1116
                                                                                                                                                                                           1294 TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1059
                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                      12 tgaagtcaggagtttgagaccagtctggccaacatggcaaaaaccccatctctactaaaaa 71
                                                                                                                                                                                                                                                    Local
                                                            GACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGG 1117
                                                                                                          gactgaggcaggagaagcacttgaac-cctggaggcggaggttgcagtgagccaagatca 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tgtaaacatgggggtttggccatgttgcccagggtggttttcaaactcctaagctcaagt 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atcatgtttcactgcagcttcgacctcctgg-gttcaggtgatcctcccacctcagcctc
                                                TGGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aatcctcc 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCT-CAAACTCCTAGGTTCACTT 129;
                                                                                                                                                                                                                                         l Similarity
186; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H. sapiens partial z21713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae;
Lases 1 to 3307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g38560
                                                                                                                                                                                                                                                                                                                                                                                   Genexpress library reference
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (22-FEB-1993) Genzentrum Muenchen, Laboratorium 1 molekulare Biologie, Am Klopferspitz 18a, 8033 Martinsried, Germany. E-mail: obermaier@vms.biochem.mpg.de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genexpress.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
 N32944
                                                                                                                                                                                                                                                                                                                                                                                                                                    Genexpress.
                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                      The Genexpress cDNA program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              partial cDNA sequence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uman .
                                                                                                                                                                                                                                                                                                                                                                                               oning vector is pBluescript
                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 330)
                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                        8.4%;
larity 78.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submission
                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/clone_lib="Stratagene cI
cat#936208"
66 c 96 g 59
                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp
1 cdna
ď
                                                                                                                                                                                                                                        Score 119; |
Pred. No. 1.0
0; Mismatcl
                                                                                                                                                                                                                                                                                                 96 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transcribed
 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNA
                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                    t SK(+);
is A.
                                                                                                                                                                                                                                                                                                                        cDNA library
                                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                   DB 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone
                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                          49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 03-FF
H25C04; single
 EST
                                                                                                                                                                                                                                                              Length 330;
                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata
 10-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-FEB-1994
                                                                                                                                                                                                                                         Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo
                                                                                                                                                                                                                                        Gaps
                                                                     248
                                                                                                                                                                                           1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252
```

```
mRNA
BASE COUNT
ORIGIN
             RESULT
LOCUS
                                                                                                                                                                                                                        뮹
                                                                       Š
                                                                                                     닭
                                                                                                                                Š
                                                                                                                                                               밁
                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                  밁
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                        1238
                                                                                                                                   1178
                                                                                                                                                                                          1119
                                                                                                                                                                                                                                                       1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                     183
                                                                                                                                                                123
                                                                                                                                                                                                           64 atcatggttcactgcagccttgaattcctgg-gctcaagtgatcttcctgcctcagcctt 122
                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                   4 ttttttttttttttgagacagggtctcactctgttacctaggctggggtgcagtggccaa
                                                                                      ttg-taaagacagagtcttgctatgttgatcaggcttattttgaactcctgggtt 236
                                                                                                                                   cccagtaggtgggactacagaagagcaccaccacacccagctcgattttttatttttctt 182
                                                                                                                                                                                            ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT-
                                                                                                                                                                                                                                                       TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC
                                                                                                                                                                                                                                                                                                                182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Deuterostomia; Chordata; Vertebrata; Gnathostomata; Osteic Sarcopterygii; Choanata; Tetrapoda; Ammiota; Mammalia; The Eutheria; Archonta; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 408)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra, Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., reveskis,E., Waterston,R., Williamson,A., Wohldmann,P. an
AA113170
zm27e06.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stops:
Source: IMAGE Consortium, LLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Washington University School
4444 Forest Park Parkway, B
Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The WashU-Merck EST Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 yy10b06.sl Homo sapiens cDNA clone Alu repetitive element;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N3294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryotae; Metazoa; Eumetazoa; Bilateria; Coelomata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Albino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                        93
                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                          മ
                                                                                                                                                                                                                                                                                                                                                                                                        <1..>408
                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/clone="270803"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
Stratagene
                                                                                                                                                                                                                                                                                                                            8.1%;
77.4%;
                                                                                                                                                                                                                                                                                                                                                                                          101
            424 bp
                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Project
                                                                                                                                                                                                                                                                                                         School of Medicine way, Box 8501, St. 1
pancreas (#937208) Homo
                                                                                                                                                                                                                                                                                                                                                                                        96
                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Elliston,K., Hawkins,M.,
Le,M., Lennon,G., Marra,M.,
., Soares,M., Tan,F.,
amson,A., Wohldmann,P. and
                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270803 3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Louis,
                                                                                                                                                                                                                                                                                                                                           Length 408;
                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similar
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63108
                08-NOV-1996
                                                                                                                                                                                                                                                                                                                ω
-:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Osteichthyes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ៥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Theria;
                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       melanocyte
                                                                                                                                                                                                                                                       1118
                                                                                                                                                                                                                                                                                  63
 clone
                                                                                                                                    1237
                                                                                                                                                                                                                                                                                                                ω
```

```
mRNA
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                   뮍
                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DIN
                  SOURCE
                                    KEYWORDS
                                                                        ACCESSION
                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                               1119
                                                                                                                                                                                                                                                                                                                                                                                                                         1059
                                                                                                                                                                                                   1238
                                                                                                                                                                                                                                                                           1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                               123
                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                          4 tttttttttttttgagacagggtctcactctgttacctaggctggggtgcagtggcnca 63
                                                                                                                                                                                                                                                                                                                                                                  atcatggttcactgcagccttgaattcctgg-gctcaagtgatcttcctgcctcagcctt 122
                                                                                                                                                                                                   TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTT 1292
                                                                                                                                                                                                                      ttg-taaagacagagtcttgctatgttgatcaggcttattttgaactcctgggtt 235
                                                                                                                                                                                                                                                                           CCTAGTAGCTGGAACTACAAGGAAGGGCCACCACCCTGACTAACTTTTTTGTTTTTTGT 1237
                                                                                                                                                                                                                                                                                            | cccagtaggtgggactacagaagagcaccaccaccacacccagctga-ttttttatttttctt 181
                                                                                                                                                                                                                                                                                                                                               ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT- 1177
                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                    g1692578
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 424)

Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M.,

Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M.,

Parsons,J., Rifkin,L., Rohlfing,T., Tan,F., Trevaskis,E.,

Waterston,R., Williamson,A., Wohldmann,P. and Wilson,R.

WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            526882 3'
AA113170
                                                                    zo16c04.sl Strattgene colon (#937204) Homo s 587046 3' similar to contains all repetitive AA131088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WashU-Merck EST Project
Washington University Sch
4444 Forest Park Parkway,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: est@watson.wustl.edu
This clone is available royalty-free through
IMAGE Consortium (info@image.llnl.gov) for fu
Seq primer: -40M13 fwd. from Amersham
High quality sequence stop: 386.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g1664733
                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.1%;
larity 78.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /lab_host="SOLR cells complement(<1..>424)
a 110 c 81 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note-"Organ: pancreas; Vector: pBluescript SK-; Site_1 EcoRI; Site_2: xhoI; Cloned unidirectionally. Primer: Oligo dT. Pancreatic Accarding a cell line. Average insert size: 1.0 kb; Uni-ZAP XR Vector; -5' adaptor sequence: 5' GAATTCGGCACGAG 3' -3' adaptor sequence: 5' CTCGAGTTTTTTTTTTTTTT 3'"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="Stratagene pancreas (#937208)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="526882"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mitochondrial eukaryotes; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 114; DB 146;
Pred. No. 1.11e-93;
0; Mismatches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          School of Medicine way, Box 8501, St. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alu repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (kanamycin resistant)"
                                                                                       repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 424;
                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 element;.
                                                                                           element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63108
                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                          clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Site_1:
```

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                               SOURCE
                                                                                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                              KEYWORDS
                                                                                                                                                               ACCESSION
                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1059
                                                                                                                                                                                                                                                                                                                                               1179
                                                                                                                                                                                                                                                                                                                                                                                                                1119
                                                                                                                                                                                                                                                                                 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                              187
                                                                                                                                                                                                                                                                                                                                                                               130
                                                                                                                                                                                                                                                                                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                               ttg-tagagacagggttttgccatgttggccaggctggtcttgaactcccaggctca 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tttttttttttttgagacagggtcttactttgtcacccaggctggaatgcaatggcaag 70
                                                                                                                                                                                                                                                                                                                                                                                                              ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC 1178
                                                                                                                                                                                                                                                                                                                                                                                                                               atcatggctcactgcagcgtcgacctcccag-gctcaagtgatcctcccatctcagcctc 129
                                                                                                                                                                                                                                                                                                                                                                 cccagtagctgggaccacaagcatgtgccaccaccacctggctaa-ttttttgtatttt-- 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                               TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
        R44830
yg31d01.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 571)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra, Parsons,J., Rifkin,L., Rohlfing,T., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and Wilson,R. WashU.Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
191; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This clone is available royalty-free through LLNL; IMAGE Consortium (info@image.llnl.gov) for further: Seq primer: -40M13 fwd. from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WashU-Merck EST Project
Washington University Scho
4444 Forest Park Parkway,
                                                                                                                                                             R44830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebbrata; Eutheria; Primates; Catarrhini; Hominidae; H
                                                                                                                                                                              repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: est@watson.wustl.edu
Lafmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                quality sequence stop: 194.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(<1..>571)
130 c 137 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/note="Organ: colon; Vector: pBluescript SK-; Site_1:
EcoRI; Site_2: XhoI; Cloned unidirectionally. Primer
Oligo dT. T-84 colonic epithelial cell line. Average
insert size: 1.0 kb; Uni-ZAP XR Vector; ~5' adaptor
sequence: 5' GAATTCGGCACGAG 3' ~3' adaptor sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCGAGTTTTTTTTTTTTTTTTT 3'"
/clone="587046"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="Stratagene colon (#937204)"
/lab_host="SOLR cells (kanamycin resist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                              element;.
                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.1%;
                                                                                                                                                                                             53 bp
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 115; DB 148;
Pred. No. 7.62e-95;
0; Mismatches 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               School of Medicine
Library went through one round of
                                                                                                                                                                                             mRNA
cdna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Box 8501,
                                                                                                                                                                                             clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161 t
                                                                                                                                                                                             34159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Louis,
                                                                                                                                                                                             ST
ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                             22-MAY-1995
similar to contain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Marra, M.,
                                                                                                                                                                                             contains Alu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo.
                                                                            or=Lafmid BA
Rsitel=Not
female. 1st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Primer:
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                              KEYWORDS
                                                                                                                               ACCESSION
                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                      1180
                                                                                                                                                                                                                                                                                                                                                                                                                                    1120
                                                                                                                                                                                                                                           1298
                                                                                                                                                                                                                                                                                                       1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match 8.0%;
Local Similarity 73.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              μ
                                                                                                                                                                                             10
                                                                                                                                                                                                                                        -T-GGCCTCCCAAAGTGCTGGGATTACAGACATGAACTGCCAGGCCCGGCC
                                                                                                                                                                                                                                                                                                                        tagtagagacggggtttcaccatgttagccaggatggtctcgatctcctgatctgcccgc 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                  teteggetaactgeaageteeaacteeegg-gtteaegeeatteteetgeeteageetee 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tttttttttttttagatggagtcttnnctctgtcgcccaggctggagtgcagtggcgtga
                                                                                                                                                                                                                                                                     ctcggcctcccaaagtgctgggattacaggcgtganaactgncgcccggcc
                                                                                                                                                                                                                                                                                                       TGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT-AGGTTCACTT
                                                                                                                                                                                                                                                                                                                                                                      tgagtagctgggactacaggcgcccactaccacgccctactaacttttttgtatttttt 179
                                                                                                                                                                                                                                                                                                                                                                                                                                  CCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCC 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTTTTTTTTGACAGGGTCT-CACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCA 1119
215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eutheria; Archonta; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 353)

Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M.,

Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M.

Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F.,

Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and
                                                                                                                               repetitive H24051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryotae; Metazoa; Eumetazoa; Bilateria; Coelomata;
Deuterostomia; Chordata; Vertebrata; Gnathostomata; Os;
Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalia;
                                                                                                                                                            ym54c03.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: est@watson.wustl.edu
High quality sequence stops: 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Source: IMAGE Consortium, LLNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GDB: G00-406-506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone is available royalty-free through LLNL; contact the E Consortium (infosimage.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/clone="34159"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                           Homo
                                                                                                                                            element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Library
                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 113; DB 26; Pred. No. 1.60e-92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eumetazoa; Bilateria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 constructed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                              clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γď
                                                                                                                                                              52348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bento
                                                                                                                                                           EST
3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Louis, MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Coelomata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                           06-JUL-1995
similar to contain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Soares
                                                                                                                                                                                                                                         1346
                                                                                                                                                                                                                                                                        290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Osteichthyes;
                                                                                                                                                            contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Theria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M.Fatima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                      1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                       REFERENCE
                                                                                                                              KEYWORDS
                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                    ACCESSION
                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                      AUTHORS
                                                                                                                                                                                                                                                                                                                    1242
                                                                                                                                                                                                                                                                                                                                                                                          1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1063 TITTTTTTTTTGACAGGGTCTCACTCTGTCACCCCAGGCTGGAGTGCAGTGGCACCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                       -atagatggggtttcaccatgttgcctagactggtctggaactcctaggctc 230
                                                                                                                                                                                                                                                                                                                                                                                                               gtagctgagactacaggtgtgcaccaccacacttggctaactttttatatttttataaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCTA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tggctcactgcagcctcgatctcttgg-gctcaagtgaccctcacatttcagcctcccaa 119
                                                                                                                                                                                                                                                                                                                                                                                          GTAGCTGGAACTACAAGGAAGGGCCACCACACCTGACTAACTTTTTTGTTTTTGTTTTGG
1 (bases 1 Hillier,L., Holman,M., H
                                                                                                                                                                                                    AA194481
zq05d10.s1
3' similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180;
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; I (bases 1 to 609)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins, M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Mari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence stops: 322
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Wilson RK
WashU-Merck EST Project
Washington University Scho
4444 Forest Park Parkway,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 471)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M.,
Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M
Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F.,
Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Deuterostomia; Chordata; Vertebrata; Gnathostomata; Os
Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalia;
Eutheria; Archonta; Primates; Catarrhini; Hominidae; H
                                                                                            Homo sapiens
                                                                                                                                                                  repetitive
AA194481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Not I and directionally cloned into the Not I and Hind III the Lafmid BA vector. Library went through one round of
                                                                                                                                                   g1784196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GDB: G00-425-284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wilson, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryotae; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           normalization. Library constructed by Bento Soares and M.Fatima
                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.0%;
Similarity 77.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="52348"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Homo sapiens"
                                                                                                                                                                                                    Stratagene m
                                                                                                                                                                                     element
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106 c
                                                                                                                                                                                                                                          609
                                                                                                                                                                                                                                          ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 113; DB 63;
Pred. No. 1.60e-92;
0; Mismatches 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eumetazoa; Bilateria; Coelomata;
                                                                                                                                                                                                      muscle 937209 Homo sapiens cDNA clone s Alu repetitive element; contains eleme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     103 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Box 8501,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MO 63108
                                                                                                                                                                                                                                        17-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Osteichthyes;
ia; Theria;
     Marra,M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo.
                                                            Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sites
                                                                                                                                                                                                                         628819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 œ,
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                          ב
                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                         1059
                                                                                                                                                                                                                                                                          1238
                                                                                                                                                                                                                                                                                                                        1179
                                                                                                                                                                                                                                                                                                                                                                       1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                               140
                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                               21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                     ctgagtagctgggaccacaggcacatgccaccacacctggctaa-tttttttgaatttt-t 197
                                                                                                                                                                                                                                                                                                                                                                                    atcacagcacactgcagcctcgacctcctgg-gctcaagtgattttcccaacctcagcctc 139
                                                                                                                                                                                                                                                                                                                                                                       ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                          TIGGTAAAGAIGGCATTICGCCAIGITGTACAGGCIGGTCTCAAACICCI
                               25h 8.0%;
L Similarity 80.0%;
184; Conservative
                                                                                                                                                                      g1243440
                                                                                                                                                                                                           za98c06.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
High quality sequence stop: 423.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Parsons, J., Rifkin, L., Rohlfing, T., Tan, F., Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and Wilson, R. Washl-Merck EST Project
                                                                                                                                                                                     N80739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1995)
Deuterostomia; Chordata;
          Eukaryotae; Metazoa; Eumetazoa; Bilateria;
                       Homo sapiens
                                                                                                                                                                                               Alu repetitive element;.
                                                                                                                                                                                                                        N80739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="Stratagene muscle 937209"
/dev_stage="adult"
/lab_host="90LR (Kanamycin resistant)"
complement(<1...609)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153 c
                                                                                                                                                                                                                        426
                                                                                                                                                                                                                        þþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 113; DB 178;
Pred. No. 1.60e-92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130 g
                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                           cDNA clone
 Vertebrata; Gnathostomata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Box 8501, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175 t
                                                                                                                                                                                                           300586
                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 others
            Coelomata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                        29-MAR-1996
similar to conta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contact the
Osteichthyes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                           contains
                                                                                                                                                                                                                                                                                                                                                                       1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Average
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Skeletal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ģ
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                           COMMENT
                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1119 ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1059 TITTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1238 TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188 a--g-agagatgacatctcaccatgtttcccagactggtcnccaactcctgggctca 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68 atctcggatcactgcggcctggacctccccgggctcaagtgatcctctcatttcagcctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 ttttttttttttatttagacagggtctcactctgtcacccaggctggagtgcagtggtgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CT-AGTAGCTGGAACTACAAGGAAGGGCCACCACCTGACTAACTTTTTTGTTTTTTGT
                                                          Vertebrata; Eutheria; Primates; Catarrhini; Hominiude, Wertebrata; Eutheria; Primates; Catarrhini; Hominiude, Wertebrata; Eutheria; Primates; Catarrhini; Hominiude, Werterston, C., Clark, N., Dubuque, T., Elliston, K., Hawkins, M., Hillier, L., Clark, N., Kucaba, T., Le, M., Lennon, G., Marra, M. Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M. Parsons, J., Rifkin, L., Rohlfing, T., Tan, F., Trevaskis, E., Parsons, J., Rifkin, L., Rohlfing, T., Tan, F., Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and Wilson, R. Washu-Merck, EST, Project
                                                                                                                                                                                                                                                                                                                                                                          N73439 461 bp mRNA EST 30-JAN-1997 yz31g10.rl Soares multiple sclerosis 2NbHMSP Homo sapiens cDNA clone 284706 5' similar to contains Alu repetitive element; contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: est@watson.wustl.edu
High quality sequence stops: 347
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hillier,L., Clark,N., Dubuque,T., Elliston, Holman,M., Hultman,M., Kucaba,T., Le,M., Le Parsons,J., Rifkin,L., Rohlfing,T., Soares, Trevaskis,E., Waterston,R., Williamson,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
183; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4444 Forest Park Parkway,
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Wilson RK
WashU-Merck EST Project
Washington University S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Archonta; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 426)
Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The
                                                                                                                                                                                                                           Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                       N73439
                                                                                                                                                                                                                                                                                                                                                           element PTR7 repetitive element ;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WashU-Merck EST ublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/clone="300586"
<1..>426
1 113 c 84 g 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.8%;
77.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 111; DB 97; Pred. No. 3.31e-90; 0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Box 8501,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Elliston, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              st.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Soares, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lennon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 426;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wohldmann, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hawkins, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ,G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Marra, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
--
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                    ORGANISM
                                                                                                                                                                                                                                                                                                                                     1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1294
                                                                                                                                                                                                                                                                                                                                                                                                         1175 ACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1234 AAAAACAAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                        199 gctgaggtgggaggatcacctaagcccagggaggtcagggctgtgggtgagccatgaccct 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141 aaatacaaaaa--ttagccgggtgtggtggcacatgcctgtagtcccagctactcagaag 198
                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84 tgagcctaggaatttgcgaccagcctgggaaacatggcaaaatcccatctccac--aa-a 140
                                                                                                                                                                                                                                                                              14
                                                                                                                                                                                                                                                                                                                                                        TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA 1235
                                                                                                                                                                                                                                                                                                                                   human clone-86152 library-Stratagene liver (#937224) vector-pBluescript SK host-SOLR cells (kanamycin resistant) primer-21m13 Rsitel-EcoRI Rsite2-XhoI Cloned unidirectionally. Primer: 011go dT. Hepatectomy from normal 49 year old male caucasian. Average insert size: 1.1 kb; Uni-ZAP XR Vector; 5' adaptor sequence: 5'-GAATTCGGCACGAG-3'; 3' adaptor sequence:
                                                                                                                                                                                                       repetitive T72327
                                                                                                                                                                                                                                        yc71e09.s1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 687 Std Error: 0.00
                    Homo
                                    5'-CTCGAGTTTTTTTTTTTTTTTTT.3'
                                                                                                                                                                                      g686848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.8%;
Similarity 79.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       primer: reverse ET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 quality sequence stop: 401.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               314 286 1800
314 286 1810
                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pT7T3D (Pharmacia) with a modified
polylinker V_TYPE: phagemid; Site_1: Not I; Site_2:
RI; 1st strand cDNA was primed with a Not I - oligo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lesions from one patient was kindly provided by Dr. Kevin
G. Becker (NINDS/NIH)."
/clone="284706"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     primer [5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tissue_type="multiple sclerosis lesions"/dev_stage="Age_46"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="Soares multiple sclerosis 2NbHMSP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'organism="Homo sapiens"
                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                        element;.
 Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .>461
91 c
Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 111; DB 185; Pred. No. 3.31e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                           cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ampicillin
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114 t
                                                                                                                                                                                                                                           86152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          resistant)"
                                                                                                                                                                                                                                        EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 461;
 Gnathostomata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          others
                                                                                                                                                                                                                                          similar to contains
                                                                                                                                                                                                                                                             01-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        oligo(dT)
                                                                                                                                                                                                                                                                                                                                                                     315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
 Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                          Alu
```

ç 밁 ဌ 밁

ဌ 8

```
BASE CO
                                                                                                                                                                                                                                                                                                                                                    င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ဌ
COMMENT
                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                           REFERENCE
                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                           ORGANISM
                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                       1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1346 GGCCGGGCCTGGCAGTTCATGTCTGTAATCCCAGCACTTTGGGAAGGCCAAAGTGAACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                   1167 AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGGCCACTGC
                                                                                                                                                                                                                                                                                                                                                                    262 acttccagcctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                                                                                                                                       nggagaatcacttgagcttgg-gaggttnaggtggtagtnaactnagactgtgccactnc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aantattagctgggtatggtggcctgtgcctatagtcccacctacttgggaggctaaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ggccaggcagggtggctcacgcctgtaatcccagcacttttggagggtcacttgagccca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGTTAGTCAGGTGGTGGCCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACT-CCAGCCTGGG
                                                                                                                                                                                                                                       ze34c08.s1
similar to
AA011026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 300)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J., Rifkin,L., Rohlfing,T., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and Wilson,R. WashU-Merck EST Project
                                                           Hillier,L., Clark,N., Dubuque,T., Elliston,K., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennor Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Trevaskis,E., Waterston,R., Williamson,A., Woh
                                                                                                                        Homo saplens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; H
1 (bases 1 to 439)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Wilson RK
WashU-Merck EST Project
                Unpublished
                             The WashU-Merck EST
                                                                                                                                                                                                                          g1472053
                                                                                                                                                                                                                                                                                        AA011026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High qality sequence stops: 229
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4444 Forest Park Parkway,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eutheria; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Washington University
                                                                                                                                                                                            numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7.7%;
llarity 73.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="86152"
68 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1..300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                      439 bp mRNA EST 29-NOV-1996 Soares retina N2b4HR Homo sapiens cDNA clone 360878 contains Alu repetitive element;.
                  (1995)
                                                                                                                                                                                                                                                                                                                                                      1095
                                                                                                                                                                                                                                                                                                                                                                                   275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 109; DB 6;
Pred. No. 6.79e-88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                School of Medicine way, Box 8501, St. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hominidae;
                                                                                                           Elliston, K., Hawkins, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65;
                                                                Lennon, c.,
Y Tan, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ното
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                          Marra, M
                                                                                                                                            Homo
                                                                                                                                                                                                                                                                        360878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1287
                                                                                                                                                                                                                                                                                                                                                                                                                   1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
```

```
mRNA
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                            Query Match 7.7%;
Best Local Similarity 80.2%;
Matches 178; Conservative
                                                                                                                                                                     1160 TCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGCACTCCAG 1101
                                                                                                                 1219 AGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGCAGGAGGA 1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                   119 ttgcttgaac-ccaggaggtggaggttgcagtgagacgagattgtgcctcttgcactccag 177
                                                                                                                              59 agccaggcgtggtggcacgtgcctgtagtcccagctactcagggggctgaggcaggagaa 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WashU-Merck EST Project
Washington University School of Medicine
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                           /tissue_type="retina"
/dev_stage="55 year old"
/lab_host="561 (ampicillin resistant)"
complement(<1..>439)
a 87 c 90 g 112 t
                                                                                                                                                                                                                                                                                                                                                                  /sex="male"
                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="Soares retina N2b4HR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Homo sapiens"
                                                                                                                                                                                                                           Score 109; DB 144; Length 439;
Pred. No. 6.79e-88;
0; Mismatches 39; Indels 5; Gaps
                                                                                                                                                                                                                             4;
```

Search completed: Wed Mar 25 13:46:13 1998 Job time: 793 secs.

. . .

밁 မှ 밁 ဌ

밁

THIS PAGE BLANK (USPTO)

[

SUMMARIES

45	C 44	. 43	4	c 41	4	c 39	38	37	36	35	34	ω	32	31	ω	c 29	S) E	27	J t	v i	24	<u>ي</u> د د د) i	21	210	10	- ا	16	15	14	13	12	1	30	ه د	o ~	1 0		4. F	<u>ر</u> س	2	c 1	Result No.
94	90	95	95	95	95	95	95	95	96	96	96	98	98	98	97	98	97	97	9 1	٥٥	0	\neg	~ (\neg	\neg	100		0	0	\circ	0	\circ	\circ	\sim	\rightarrow \circ	20	o 0) C	0		0	\vdash	Score
																										7.1	•	•				•			•	•	•	•	•				Query Match
16	. 0	5	27	30	8	88	72	21	ω.	18	9	17	84	78	62	18	9	٥	2 (200	2 5	5	8	77	24	422	2 6	96	79	51	8	28	28	2 5	20 0	J F	7 0	4 1	1 /	00	5	၀	Length
27	ά	71	œ	щ	ω	ω	ØΙ		_	_	0	7	2	0		μ,	>	_ (00 -		A +		7 (۱ د	(л с -	. د	0	N	ω	0	_		, v	00	א ע	۱ د	ــا د	40	4	. μ	8	DB
30268	28424	· tn	10224	22617	42080	42074	28515	33851	22595	22595	21634	22432	35871	22488	23002	35508	21639	35570	22777	32912	34784	200	2220	404	22594		20078	224	19535	5363	3489	22553	ထော	38611	2002	22673	2 6	2000	2749	26253	338	A28236	ID
T11062 Umbilical v	bodul.T/ Soares re	22b10.r1 NCI CGAP	80g09.r1 Stratagen	11g08.s1 NCI CGAP	63d03.rl NCI CGAP	63d03.sl NCI CGAP	48d10.s1 Soares Nb	T43490 Fetal brain	18q12.sl NCI CGAP	11f04.sl NCI CGAP	10b12.sl NCI CGAP	12b02.s1 Stratagen	T67628 Fetal lung	34dll.sl NCI CGAP	38al0.sl NCI CGAP	T63493 Jurkat T-ce	10f03.sl NCT CGAP	10hlo ri NCT CGAP	S6d09 rl Soares	T32968 Embryo: 12	T54212 Fetal hea	milar to none	08d02 sl stratagen	63e03 sl soares to	11f01 s1 NCT CGAP	dres dres	32b04.sl Soares Nb	33d06.sl NCI CGAP	33g12.s1 Soares Nh	man fetal brain	77h10.r1 Soares Nh	10h07.sl NCI CGAP	08d10.s1 Stratag	r07525 Brain IV	ROMIO el soares	TOPOS SE NOT COMP	17405 cl NCI CGA	nitar to none.	silom to some	1/c02.rl Soares Nb	r43242 Fetal brain	12d11.r1 Soar	Description
.04e-8	. Ube-	.06e-8	.06e-8	.06e-8	.06e-8	.06e-8	.06e-8	.06e-8	.40e-9	.40e-9	.40e-9	.37e-9	.37e-9	.37e-9	.41e-9	.37e-9	41e-9	416-9	556-0	520-9	770-0	216-9	9000	. 80e-9	806-9	2 216-96	. 80e-9	.21e-9	.21e-9	.21e-9	.49e-9	.49e-99	.38e-1	.43e-10	430-10	10 - 10 E	130-10	.32e-10	.26e-10	.26e-10	.26e-10	.97e-11	Pred. No.

ALIGNMENTS

TITLE	REFERENCE AUTHORS	ORGANISM	NID KEYWORDS SOURCE	Z	RESULT 1 LOCUS
Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Wartin,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie,T., Waterston,R. and Wilson,R. WashU-Merck EST Project 1997	Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S.,	Homo sapiens Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;	91925276 EST. human.	<pre>zt12d11.r1 Soares NbHTGBC Homo sapiens cDNA clone 712917 5' similar to contains Alu repetitive element; contains element PTR7 repetitive element;.</pre>	AA282360 503 bp mRNA EST 15-MAY-1997

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
BASE COUNT
                                                                                                                                                                                                                        çр
                                                                                                                                                                                                                                                                                                                                                                                               ę
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ဌ
                                                                                                                                                                                                                                                    맒
                                                                                                                                                                                                                                                                              မှ
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                     Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                     ACCESSION
                                                                                                                                                 DEFINITION
                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                 1153
                                                                                                                                                                                                                                                                                                                                                                                                  1272
                                                                                                                                                                                                                        1093 GACAGAGTGAGACCCTGTCAAAAAAAAAAAAAAA 1060
                                                                                                                                                                                                                                                                                                                                         1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                             137
                                                                                                                                                                                                                                                                                                                                                        77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 76.3%;
                                                                                                                                                                                                                                     | agcagaacaagaccctgtctcaaaaaaaaaaaaaa 345
                                                                                                                                                                                                                                                                                                                                       acctgggcaagatggcgagaccccatctctac--aa-aaaaatttaaaaaa-ttacctggg 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gttcacgcctgtaatcccagcactgtggggggatcacttgagcccaggagtttgagacca 136
                                                                                                                                                                                                                                                                                                agc-ccaggtggtcaaggctgtggtgagctatgatcatgccactgcactccagcctgggt 311
                                                                                                                                                                                                                                                                                                                                                                                                  GTTCATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCA 1273
                                                                                                                                                                                                                                                                                AGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGCACTCCAGCCTGGGT 1094
                                                                                        g1990570
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 209;
                                                                                                                   AA338322 251 bp mRNA
EST43342 Fetal brain I Homo sapiens cDNA
containing Alu repeat.
AA338322
                              Eukaryotae;
Vertebrata;
                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: estewatson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -28ml3 rev2 ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Wilson RK
WashU-Merck EST Project
Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High quality sequence stop: 483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4444 Forest Park Parkway, Box 8501, St. Louis,
      (bases 1 to 251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           נם
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            constructed by Bento Soares and M. Fatima Bonaldo."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="Soares NbHTGBC"
/tissue_type="Germinal B-cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   location/Qualifiers
                                 Mammalia; Eutheria;
                                             mitochondrial eukaryotes; Metazoa; Chordata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 114; DB 98;
Pred. No. 3.97e-116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 59; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105 t
                               Primates; Catarrhini; Hominidae;
                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 503;
                                                                                                                                                 end similar to EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MO 63108
                                                                                                                                                               21-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                         1154
```

```
mRNA
BASE COUNT
ORIGIN
                                                                                                                                 RESULT
LOCUS
                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
COMMENT
     ACCESSION
NID
                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1076 ACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCACCATGGCTCTCTGCAG 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64 cettggacetectgggctcaggtgatectcecaceteagettectgagtagetgggacta 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 acagggtcttgctctgtcactcaggctggagtgcagtggtgccatcatggctcactgcaa 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RS Adams, M.D., Kerlavage, A.R., Fleischmann, R.D., Fuldner, R.A., Bult, C.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D., White, O., Sutton, G., Blake, J.A., Brandon, R.C., Man-Wai, C., Clayton, R.A., Cline, T.R., Cotton, M.D., Earle-Hughes, J., Fine, L.D., Fitzgerald, L.M., Fitzhugh, W.M., Fritchman, J.L., Geoghagen, N.S., Glodek, A., Gnehm, C.L., Hanna, M.C., Hedblom, E., Hinkle, P.S. Jr., Kelley, J.M., Kelley, J.C., Liu, L.-I., Marmaros, S.M., Merrick, J.M., Moreno-Palanques, R.F., McDonald, L.A., Nguyen, D.T., Pelligrino, S.M., Phillips, C.A., Ryder, S.E., Scott, J.L., Saudek, D.M., Shirley, R., Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y., Bednarik, D.P., Cao, L., Cepeda, M.A., Coleman, T.A., Collins, E.J., Dimke, D., Feng, D.-F., Ferrie, A., Fischer, C., Hastings, G.A., Le, W.W., Hu, J.S., Greene, J.M., Gruber, J., Hudson, P., Kim, A.K., Kozak, D.L., Kunsch, C., Hungjun, J., Li, H., Meissner, P.S., Olsen, H., Raymond, L., Wei, Y.F., Wing, J.J., Li, H., Meissner, P.S., Olsen, H., Raymond, L., Wei, Y.F., Wing, J.J., Li, H., Meissner, P.S., Olsen, H., Raymond, L., Wei, Y.F., Wing, J.J., Li, H., Meissner, P.S., Olsen, H., Raymond, D.J., Fannon, M.R., Rosen, C.A., Haseltline, W.A., Fields, C., Fraser, C.M. and Venter, J.C.

Initial assessment of human gene diversity and expression patterns based upon 8 million nucleotides of cDNA sequence
                                                                                                                                                                                                                                                                   ttaccatgttgcctagggttgggctggaactcctgggntca 223
                                                                                                                                                                                                                                                                                                                                                                               TCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                   CAAGGAAGGGCCACCACACCTGACTAACTTTTTTGTTTTTGTTTTGGTAAAGATGGCATT 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCT-AGTAGCTGGAACTA 1194
element ;.
AA262532
g1897894
                                                                          AA262532 300 bp mRNA EST 18-MAR-1997 zs17c02.r1 Soares NbHTGBC Homo sapiens cDNA clone 685442 5' similar to contains Alu repetitive element; contains element MSR1 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 3018699056
Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.6%;
Similarity 75.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             For clone availability, additional sequence and expression information related to this EST, please check the TIGR Human Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The Institute for Genomic Research 9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Other_ESTs: EST43243 THC157998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96026280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer: M13-21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : arkerlav@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(<1..>251)
67 c 64 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Organ: brain; Vector:
EcoRI; Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /dev_stage="fetus, 24 wks"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="Fetal brain I"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /www.tigr.org/tdb/hgi/hgi.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 108;
Pred. No. 1.
0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 41;
.26e-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pBluescript SK-; Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MD 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲,
```

```
RESULT
LOCUS
                                                                                                                                                                                         င္ပ
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                ç
                                                                                                                 ç
                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                    1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                ry Match
                                                                                                                                                                                                                                                                         1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                   187
                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                          83
                                                                                                                                                                                                                                                                                                                                                                      tgggaggactgcttgagcccaggaatttgagaccaacctgggcaagatagtgagacccta 127
                                                         4
                                                                                                                                     gagctatgattgggccactgcaccctagcctgggcgatagagtgagaccctgtca
                                                                                                                                                                                                                 agctactcaggaggctgaggcaagaggttcacttgagc-ccaggagatcgaggctgtaat 245
                                                                                                                                                                                                                                                                                               tetetattaaa-aaaaattaaaaaattageeaggegtaatggggeaeacetgtaattee 186
                                                                                                                                                                                                                                                                                                                                                    TGGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAAATGCCA 1248
                                                                                                                                                                                                                                                                         GAGCCATGGTGGTGCCACTGCACTCCAGCCTGGGTGACAGAGTGAGACCCTGTCA
                                                                                                                                                                                             AGCTACT-AGGAGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGA 1129
AA127499 447 bp mRNA EST zn81e05.s1 Stratagene lung carcinoma 937218 H 564608 3' similar to contains Alu repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Wilson RK
WashU-Merck EST Project
WashIngton University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 300)
Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M., Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M. Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F., Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
179; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Putative full length read
The vector to vector length is
Seq primer: -28m13 rev2 ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <1..>300
a 71 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     constructed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not and Eco RI sites of the modified p773 vector. Library went through one round of normalization, and was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="Germinal B-cell"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="Soares NbHTGBC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="685442"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                              7.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 108; DB 44;
Pred. No. 1.26e-107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bento Soares and M. Fatima Bonaldo."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66
t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 300;
   Homo sapiens cDNA e element; contains
                                         19-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                            ω
••
                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                         1188
                     clone
```

```
DEFINITION
ACCESSION
NID
                                                                                                                                                                                                                                                                                                                                                                                                                           DASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                              RESULT
LOCUS
                                                                                                                                                                      δã
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                               δÃ
                                                                                                            Š
                                                                                                                                          멍
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                             1238
                                                                                                                                                                                                                                                                                               1119
                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                          261
                                                                                                                                                                                                                                                        143 atctaggctcactgcaaccccccccccccaggttcaagcaattatgctgcctcagcctc
                                                                                                                                                                                                                                                                                                                                                                            Local
                                                              U
                                                                                                                             ttagtagagacggggtttcaccatgttggccaggctggtctagaactcctgagctca 317
                                                                                                                                                                                         TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                   ACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 447)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M.,
Holman,M., Fultman,M., Kucaba,T., Le,M., Lennon,G., Marra,
Parsons,J., Rifkin,L., Rohlfing,T., Tan,F., Trevaskis,E.,
Parston,R., Williamson,A., Wohldmann,P. and Wilson,R.
                   similar to C06339
                                                                                                                                                                                                                                                                                                                                                              l Similarity
180; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4444 Forest Park Parkway, Box 8501, St. Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WashU-Merck EST Project 
Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     element MER22
AA127499
                                              C06339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Insert Length: 511 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Wilson RK
WashU-Merck EST Project
Washington University So
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae; mitochond:
Vertebrata; Mammalia;
    g1503115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: -40M13 fwd. from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g1686789
                                                                                                                                                                                                                                                                                                                                                            7.6%;
ilarity 75.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             quality sequence stop: 409.
                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="SOLR (kanamycin complement(<1..>447)
/db_xref="GDB:4593662"
/db_xref="BBB:4593662"
122 c 89 g 139 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Stratagene lung carcinoma 937218"
/dev_stage="cell line NCI-H69"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1..447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repetitive element
                                              đđ
                                                                                                                                                                                                                                                                                                                                                          Score 108; DB 94;
Pred. No. 1.26e-107;
0; Mismatches 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      School of Medicine
                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Louis,
                                                EST
                                                                                                                                                                                                                                                                                                                                                                                         Length 447;
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MO 63108
                                                11-OCT-1996
                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hominidae;
                                                                                                                                                                                                                                     1178
                                                                                                                                                                                                                                                                   202
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                      SOURCE
                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                       KEYWORDS
                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
     TITLE
                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                               1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1119 ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC 1178
                                                                                                                                                                                                                                                                                                                                                                                                        1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                179 ttagtanagatggggtttcaccatgttagccaggatggtctcgatcttct 228
                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match 7.5%;
Local Similarity 76.1%;
hes 175; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 tttttttatttttgagacggagtcttgctctgtcgcccaggctggagtgcagtggcacg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atcttggctcactgcaagctccacctcccag-gttcacgccattctcctgcctcagcctc 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                      CTA-GTAGCTGGAACTACAAGGAAGGCCCACCACCCTGACTAACTTTTTTGTTTTTGT 1237
                                                                                                                                                                                                                                                                                                                               TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT
                                                                                                                                                           ESCONTAINS Alu repetitive element;.

AA226159
91847475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (08-MAY-1996) to the DDBJ/EMBL/GenBank databases. Jun Takeda, Institute for Molecular and cellular Regulation, Gunma University, Dept. of Molecular Medicine; 3-39-15 Showa-machi, Maebashi 371, Japan (E-mail:)takeda@news.sb.gunma-u.ac.jp, Tel:81-272-20-8856, Fax:81-272-20-8896)
Project-'Human pancreatic islet cDNA'
vector-Lambda ZAPII
primer-T7 primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mrNA was prepared from normal adult human islets. cDNA wa directionally synthesized from the Xho I in the vector to
                                                                            Eukaryotae; mitochond:
Vertebrata; Mammalia;
                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST(expressed sequence tag).
Homo sapiens human pancreatic islets cDNA to mRNA, clone_lib:Human
National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rsite2-Xho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rsitel=Eco RI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     not determined
Unpublished (1996)
2 (bases 1 to 514)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalla; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pancreatic islet cDNA clone:hbc5334.
                     NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Takeda, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Гakeda, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (sites)
                                       (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               size fractionated to remove sequences <1000 bp in size.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/clone='hbc5334"
/clone_lib="Human pancreatic islet cDNA"
/tissue_type="human pancreatic islets"
/tissue_type="human pancreatic islets"
158 c 96 g 143 t 4 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                          mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                         465)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 106; DB 91; Length 514
Pred. No. 8.32e-105;
0; Mismatches 52; Indels
     Cancer
     Genome
 Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 514;
                                                                                                                                                                                                                              ST 01-MAY-1997
clone 1910 similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   others
                                                                                                                                                                                                                                                                                                                               1287
 Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                            Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the EcoRI
                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
```

```
ACCESSION
NID
                                                                                                           RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                        Сħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ဌ
                                                                                                                                                                                                    ဌ
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                            မှ
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                       1068 AAAAAAAAA 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1306 GGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCAT 1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                              1128 GAGCCATGGTGCCACTGCACTCCAGCCTGGGTGACAGAGTGAGACCCTGTCAAAAAA 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1246 CTTTACCAAACAA-AAAACAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCC 1188
                                                                                                                                                                                                                                                   456 aaaaaaaaaa 465
                                                                                                                                                                                                                                                                                                                         396 aagctatgatcatgccactgcactccaacttgggtgacagagcaaggccctgtctccaaa 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217 gggaggatcatttgagcccatgagttcaagactagcctgggcaacatagtgagaccctgt 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              277 ctctacaaaaatacaaaataaaaaaattagctaggtgtggtggcatgcacctgtagtccg 336
N n37d05.sl NCI CGAP Pr2 H
contains Alu repetitive el
AA229986
g1852280
                                                                                                                                                                                                                                                                                                                                                                                                                   agctgcttgggaggctgaggcgggaggattgcttcag-tccaggaagttcaggctgcagg 395
                                                                                                                                                                                                                                                                                                                                                                                           AGCTACTAGG-AGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGA 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: (301) 496-1550

Email: Robert_Strausberg@nih.gov

Tissue Procurement: W. Marston Linehan, M.D., Rodrogo Chuaqui,
M.D., Michael Emmert-Buck, M.D., Ph.D.

cDNA Library Preparation: David B. Krizman, Ph.D.

cDNA Library Arrayed by: Genome Systems Inc., Greg Lennon, Ph.I.

DNA Sequencing by: Washington University Genome Sequencing Cent

Clone distribution: NCI-CGAP clone distribution information can

found through the I.M.A.G.E. Consortium/LLNL at:

www-bio.llnl.gov/bbrp/inage/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Phone: (301) 496-1550
E-mail: Robert_Strausberg@nih.gov
Seq primer: -28m13 rev1 ET from Ar
High quality sequence stop: 320.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 74.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       For additional information: Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"Vector: pAMP10; Site_1: Not1; Site_2: EcoRI; 1st strand cDNA was primed with oligo(dT)17 on 50 ng of DNAse-treated, total cellular RNA obtained from 5,000-10,000 microdissected, histologically normal prostate epithelial cells. Double-stranded cDNA was ligated to EcoRI adaptors, 5 cycles of PCR applied to the CDNA with an adaptor specific primer, and the resulting PCR product subcloned into pAMP10 by the UDG-cloning method (Life Technologies). Average insert size is 600 bp. NOTE: Not directionally cloned. This library was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      constructed by David Krizman."
/clone="1910"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /dev_stage="45 years old"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="NCI CGAP Prl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 105; DB 71;
Pred. No. 2.13e-103;
0; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133
                                                                                                        mRNA
                                                          element;.
                                                                                  Homo sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 3;
                                                                                  01-MAY-1997
4450 similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ě,
```

```
REFERENCE
AUTHORS
TITLE
                                                                                        Ş
                                                                                                                                             밁
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                        Ş
δã
                                             밁
                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
COUNT
                                                                                                                                                                                             1117
                                                                                                                                                                                                                                                                                             1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
  1236
                                                                                                                                                                                                                   166 caatctoggotcacogcagoctcoacotcotgg-gttcaagtgattctcotgcctcagcc 224
                                                                                                                                                                                                                                                                                                                      107 acattttcttttttttgagacggagtttcactc-gttgcccaggctggagtgcaatggcg 165
                                                                                                                                                                                                                                                                                                                                                                                     y Match 7.3%;
Local Similarity 75.8%;
hes 175; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rissue Procurement: W. Marston Linehan, M.D., Rodrogo Chuaqui, M.D., Michael Emmert-Buck, M.D., Ph.D.
cDNA Library Preparation: David B. Krizman, Ph.D.
cDNA Library Arrayed by: Genome Systems Inc., Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/ILNL at:
www-bio.llnl.gov/bbrp/image/image.html
For additional information: Robert Strausberg, Ph.D.
Phone: (301) 496-1550
E-mail: Robert_Strausberg@nih.gov
Seq primer: -41ml3 fwd. ET from Amersham
High quality sequence stop: 306.
  GTTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCC 1286
                      ttttagtagagacggggcttctcccatgttggtcaggctggtctcgaactcc 335
                                                                                          T-CCTAGTAGCTGGAACTACAAGGAAGGGCCACCACCACCTGACTATTTTTGTTTTTT
                                                                                                                                             CCACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTC
                                                                                                                                                                                                                                                                                        ACTITITITITITITITIGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCA 1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Robert Strausberg, Ph.D Tel: (301) 496-1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae; mitochondı
Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 361)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note "Vector: pAMP10; Site_1: Not1; Site_2: ECORI; 1st strand cDNA was primed with oligo(dT)17 on 50 ng of DNAse-treated, total cellular RNA obtained from 5,000-10,000 microdissected preneoplastic cells histologically determined to be prostatic intraepithelial neoplasta 2 (PIN2) cells. Double-stranded cDNA was ligated to EcoRI adaptors, 5 cycles of PCR applied to the CDNA with an adaptor-specific primer, and the resulting PCR product subcloned into pAMP10 by the UDG-cloning method (Life Technologies). Average insert size is 600 bp. NOTE: Not directionally cloned. This library was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="45 years old"
/lab_host="DH10B"
<1...>361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           constructed by David Krizman." /clone="4450"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/note="Vector: pAMP10; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone_lib="NCI CGAP Pr2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mitochondrial eukaryotes; Metazoa; Chordata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o
                                                                                                                                                                                                                                                                                                                                                                                     Score 104; DB 72; 1
Pred. No. 5.43e-102;
0; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 361;
                                                                                                                                                                                                                                                                                                                                                                                       Indels 3;
                                                                                                                                                                                             1176
                                                                                                                                                                                                                                                                                                                                                                                       ω
```

```
mRNA
BASE COUNT
δã
                                                 밁
                                                                                             Ωy
                                                                                                                                                밁
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                               1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                 164
                                                                                                                                                105
                                                                                                                                                                                                                                                45
                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adams, M.D., Kerlavage, A.R., Fleischmann, R.D., Fuldner, R.A.,
Bult, C.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D.,
White, O., Sutton, G., Blake, J.A., Brandon, R.C., Man-Wai, C.,
Clayton, R.A., Cline, T.R., Cotton, M.D., Earle-Hughes, J., Fine, L.D.,
Fitzgerald, L.M., Fitzhugh, W.M., Fritchman, J.L., Geoghagen, N.S.,
Glodek, A., Gnehm, C.L., Hanna, M.C., Hedblom, E., Hinkle, P.S.Jr.,
Glodek, A., Gnehm, C.L., Hanna, M.C., Hedblom, E., Hinkle, P.S.Jr.,
Kelley, J.M., Kelley, J.C., Liu, L.-I., Marmaros, S.M., Merrick, J.M.,
Moreno-Palanques, R.F., McDonald, L.A., Nguyen, D.T., Pelligrino, S.M.,
Phillips, C.A., Ryder, S.E., Scott, J.L., Saudek, D.M., Shirley, R.,
Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y.,
Bednarik, D.P., Cao, L., Cepeda, M.A., Coleman, T.A., Collins, E.J.,
Dimke, D., Feng, D.-F., Ferrie, A., Fischer, C., Hastings, G.A.,
He, W.W., Hu, J.S., Greene, J.M., Gruber, J., Hudson, P., Kim, A.K.,
Kozak, D.L., Kunsch, C., Hungjun, J., Li, H., Meissner, P.S., Olsen, H.,
Raymond, L., Weil, Y.F., Wing, J., Xu, C., Yu, G.L., Ruben, S.M.,
Dillion, P.J., Fannon, M.R., Rosen, C.A., Haseltine, W.A., Fields, C.,
Fraser, C.M. and Venter, J.C.
Initial assessment of human gene diversity and expression patterns
based upon 83 million nucleotides of cDNA sequence
AL Nature 377 (6547 Suppl), 3-174 (1995)
                         cccgagtagctgggattacaggtgcttgccaccatgcctggctaatttttggtattttttt 223
                                                                                               CACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                                                                                                                         catctaggctcactgcaacctccacctccnggnt-tcaagtnattctcctgcctcancct 163
                                                                                                                                                                                                                         CCT-AGTAGCTGGAACTACAAGGAAGGGCCACCACCTGACTAACTTTTTTGTTTTTTG
                                                                                                                                                                                               CTTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCAC 1117
                                                                                                                                                                                                                                                                                               l Similarity
172; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA326121 367 bp mRNA I EST29525 Cerebellum II Homo sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   containing Alu repeat.
AA326121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  information related to this EST, please check the TIGR Human Gene Index (http://www.tigr.org/tdb/hgi/hgi.html)
Seq primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 3018699056
Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The Institute for Genomic Research 9712 Medical Center Drive, Rockvil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g1978609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: arkerlav@tigr.org For clone availability,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 367)
                                                                                                                                                                                                                                                                                                                                                                                                                         48
                                                                                                                                                                                                                                                                                            7.3%;
larity 74.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note-"organ: brain; Vecto
ECORI; Site_2: XhOI"
/clone_lib="Cerebellum II"
/tissue_type="cerebellum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="adult"
<1..>367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mitochondrial eukaryotes; Metazoa; Chordata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                            Score 103; DB 36;
Pred. No. 1.38e-100;
0; Mismatches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                         70 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  additional sequence and expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rockville, MD 20850 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vector:
                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pBluescript SK-; Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST
5'
                                                                                                                                                                                                                                                                                                                                           Length 367;
                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-APR-1997
end similar to EST
                                                                                                                                                                                                                                                                                                                                                                                                                         others
                                                                                                                                                                                                                                                                                               ω
1236
```

```
REFERENCE
,
S
                                     뭥
                                                                      ş
                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                Query Match 7.3%;
Best Local Similarity 72.5%;
Matches 198; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
   1134
                                                                           1075
                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1237
                                       63
                                                                                                                w
                    agcotacacototggga-otoaagcaatoottotacatoagcotocotagtagctagggc 121
                                                                          GACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCAC-CATGGCTCTCTGC 1133
                                                                                              AGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCC-TAGTAGCTGGAAC 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTG-GTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 751 Std Error: 0.00
Seq primer: mob.REGA+FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, I Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Mar. Parsons, J., Rifkin, L., Rohlfing, T., Tan, F., Trevaskis, E Waterston, R., Williamson, A., Wohldmann, P. and Wilson, R. Washu-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W93002 384 bp mRNA EST 07-MAY-1997 zh80d12.sl Soares fetal liver spleen lNFLS S1 Homo sapiens cDNA clone 418391 3' similar to contains Alu repetitive element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 340.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryotae; mitochondx
Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g1422153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W93002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 384)
                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           constructed by Bento Soares and M.Fatima Bonaldo/clone="418391"
                                                                                                                                                                                                                                                                                                                                                                                                       double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Pac I and cloned into the and Eco RI sites of the modified PJ773 vector. Library went through one round of normalization. Library
                                                                                                                                                                                                                                       /sex-"male"
                                                                                                                                                                                                                                                                                                                                                   /clone_lib="Soares fetal liver spleen lNFLS S1"
                                                                                                                                                                                                                                                                                                               dev_stage="20 week-post conception fetus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                               Score
Pred.
                                                                                                                                                0;
                                                                                                                                              e 104; DB 69;
No. 5.43e-102;
Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Elliston,K., Hawkins,M.,
Le,M., Lennon,G., Marra,M.,
                                                                                                                                                                                                                                                                                                resistant)"
                                                                                                                                                                                Length 384;
                                                                                                                                                                                                                                         1 others
                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trevaskis, E.,
                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hominidae;
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          Library
                                                                                                                                                                                                                                                                                                                                                                                                                                               the Pac
```

```
mRNA
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1253
                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1313 CTGGGATTACAGACATGAACTGCCAGGCCCGGC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adams, M.D., Kerlavage, A.R., Fleischmann, R.D., Fuldner, R.A.,
Bult, C.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D.,
White, O., Sutton, G., Blake, J.A., Brandon, R.C., Man-Mai, C.,
Clayton, R.A., Cline, T.R., Cotton, M.D., Earle-Hughes, J., Fine, L.D.,
Fitzperald, L.M., Fitzhugh, W.M., Fritchman, J.L., Geoghagen, N.S.,
Glodek, A., Gnehm, C.L., Hanna, M.C., Hedblom, E., Hinkle, P.S.Jr.,
Kelley, J.M., Kelley, J.C., Liu, L.-I., Marmaros, S.M., Merrick, J.M.,
Moreno-Palanques, R.F., McDonald, L.A., Nguyen, D.T., Pelligrino, S.M.,
Phillips, C.A., Ryder, S.E., Scott, J.L., Saudek, D.M., Shirley, R.,
Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y.,
Bednarik, D.P., Cao, L., Cepeda, M.A., Coleman, T.A., Collins, E.J.,
Dimke, D., Feng, D.-F., Ferrie, A., Fischer, C., Hastings, G.A.,
He, W.W., Hu, J.S., Greene, J.M., Gruber, J., Hudson, P., Kim, A.K.,
Kozak, D.L., Kunsch, C., Hungjun, J., Li, H., Meissner, P.S., Olsen, H.,
Raymond, L., Wei, Y.F., Wing, J.J., Xu, C., Yu, G.L., Ruben, S.M.,
Dillion, P.J., Fannon, M.R., Rosen, C.A., Haseltine, W.A., Fields, C.,
Tnitial assessment of human game diversity and expression patterns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgggattacaggcttcagcanctgtgcctggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGGCCTCCCAAAGTG 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tettectatgttgeceatgetggtettgaaeteetgggeteaagtgateeteeeaagtg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 3:
96026280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g2038587
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA386111
EST07525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Initial assessment of human gene diversity and expression patterns based upon 83 million nucleotides of cDNA sequence Nature 377 (6547 Suppl), 3-174 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat.
AA386111
                                                                                                                                                                                                                                                                                For clone availability, additional sequence and expression information related to this EST, please check the TIGR Human Gene Index (http://www.tigr.org/tdb/hgi/hgi.html)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Other_ESTs: EST01568 THC110460 Contact: Kerlavage, AR
                                                                                                                                                                                                                                                                                                                                                                                                          9712 Medical Center Drive, Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                            Seq primer: M13-21
                                                                                                                                                                                                                                                                                                                                                        Email: arkerlav@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                      Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                         The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 426)
                        97
                        þ
                                                                                                                                        /note="Organ: brain; Vector: pBluescript SK-; Site_1:
EcoRI; Site_2: EcoRI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brain
                                                                                           /clone_lib="Brain IV"
/sex="female"
                                                                  'dev_stage="fetus, 17-18 wks"
                                                                                                                                                                                       ∕organism="Homo sapiens"
                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                        122 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         426
n IV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo
                   97 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                   Rockville, MD
                        108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA similar to EST containing Alu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          273
                        ct
                                                                                                                                                                                                                                                                                                                                                                                                                                   20850 USA
                        2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
```

Query Match

Score 104;

DΒ

62;

Length 426;

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                           ORIGIN
                                                         BASE COUNT
                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1189
                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCTA-GTAGCTG 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctgcaacctccacctgctgg-gttcaagcgattctcctgcctcagccaacccaagtagctg 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTTGACAGGGTCTCACTCTGTCACCCCAGGCTGGAGTGCCACCACCACCATGGCTCT 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ggggtttcaccgtgttagccaggatggtctcgatctcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra, Parsons,J., Rifkin,L., Rohlfing,T., Tan,F., Trevaskis,E., waterston,R., Williamson,A., Wohldmann,P. and Wilson,R. Washly-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g1688767
EST.
                                                                                                                                                                                                                                                                                                        Seq F
                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Wilson RK
WashUrMerck EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA128930 428 bp mRNA EST 19-MAY-1997 zo08d10.sl Stratagene neuroepithelium NT2RAMI 937234 Homo sapiens clone 567091 3' similar to contains Alu repetitive element;.
                                                                                                                                                                                                                                                                                                                                    Unpublished (1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA clone
AA128930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169;
                                                                                                                                                                                                                                                                                                                                                                                               Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  numan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 428)
                                                                                                                                                                                                                                                                                                                      primer: -40Ml3 fwd. from Amersham
                                                                                                                                                                                                                                                                                                        quality sequence stop: 321.
                                                         88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                         Ω
                                                                                                                                         complement(<1..>428)
/db_xref="GDB:4591490"
101 c 72 g
                                                                                                  /lab_host="SOLR (kanamycin
                                                                                                                               /clone_lib-"Stratagene neuroepithelium NT2RAMI 937234"
                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                /dev_stage="Ntera-2/RA+MI neuroepithelial cells"
                                                                                                                                                                                                                                                               'organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mitochondrial eukaryotes; Metazoa; Chordata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
7.3%;
76.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
Score 103; DB 94;
Pred. No. 1.38e-100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5.43e-102;
atches 47;
                                                           167
                                                                                                  resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
               Length 428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1179
                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttg-tagagacgggatgttgccatcttgcctaggctggtcttgaactcctgagtt 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atcatggeteactgaageettgaacteetgg-geteaagtgatetteeeactteageete 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTT 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccaagtagctaggaccacaggcacatgccaccatgcttggctaatttttaaaaaattat-t 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttcttgctttttaagagacagggtctcactctgtcccccaggctggagtgcagtggcacc 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: (301) 496-1550

Email: Robert_Strausberg@nih.gov

Tissue Procurement: W. Marston Linehan, M.D., Rodrogo Chuaqui,
M.D., Michael Emmert-Buck, M.D., Ph.D.
CDNA Library Preparation: David B. Krizman, Ph.D.
CDNA Library Arrayed by: Genome Systems Inc., Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:

www-bio.llnl.gov/bbrp/image/image.html
For additional information: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA225537 428 bp mRNA EST 01-MAY-1997 nc10h07.sl NCI CGAP Prl Homo sapiens cDNA clone 1910 similar to contains Alu repetitive element; contains element LTR1 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g1846950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA225537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA225537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Phone: (301) 496-1550
E-mail: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOITO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               element
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 428)
                                                                                                                                                                                                                                                                                                                                                                                                                                primer: -41m13 fwd. ET from h quality sequence stop: 208.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :
                                                                                                                                                                /Organism="Homo sapiens"
//note="Vector: pANPIO; Site_1: Not1; Site_2: EcoRI; 1st
strand cDNA was primed with oligo(dT)17 on 50 ng of
DNAse-treated, total cellular RNA obtained from
5,000-10,000 microdissected, histologically normal
prostate epithelial cells. Double-stranded cDNA was
ligated to EcoRI adaptors, 5 cycles of PCR applied to th
CDNA with an adaptor-specific primer, and the resulting
PCR product subcloned into pANPIO by the UDG-cloning
method (Life Technologies). Average insert size is 600
                                                                                                         constructed by David Krizman.
                                                                                                                                 method (Life Technologies). Average insert size is 600 bp. NOTE: Not directionally cloned. This library was
/dev_stage="45 years old"
/lab_host="DH10B"
                                            /sex="Male"
                                                                 /clone_lib="NCI CGAP Prl"
                                                                                       /clone="1910"
                                                                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mitochondrial eukaryotes; Meta Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cancer Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Metazoa; Chordat
tes; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              þe
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
BASE COUNT
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1182
                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1063 TTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCACCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180 gtagagacagggtctcactatgttgcccaggctagtcttgaactcatgggctcaaaatgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240 cctccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 tagetteetgeageetgaaetteetgga-etgaageaateeteeegeeteegeeteecaa 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ttttttttggagacagggncttgctctgtcacccaagttggagtgcagtggcatgatca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGG 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCTA- 1181
                                                                                                                                                                                                                                        This clone is available royalty-free through LLNL; IMAGE Consortium (info@image.llnl.gov) for further i Seq primer: -28ml3 rev2 ET from Amersham High quality sequence stop: 432.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 468)
Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M., Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M., Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F., Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  zr77h10.r1 Soares NhHMPu S1 Homo sapiens cDN
similar to contains Alu repetitive element;.
AA234890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity
181; Conser
                                                                                                                                                                                                                                                                                                                                          Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                 Washington University Scho
4444 Forest Park Parkway,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g1859401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         numan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.2%;
larity 73.6%;
Conservative
/Organism="Homo sapiens"
//note="Organ: mixed (see below); Vector: pT7T3D-Pac
//note="Organ: mixed (see below); Vector: pT7T3D-Pac
(Pharmacia) with a modified polylinker; Site_1: Not I;
Site_2: Eco RI; Equal amounts of plasmid DNA from three
normalized libraries (melanocyte 2NbHM, pregnant uterus
NbHPU, and fetal heart NbHH19W) were mixed, and ss circles
were made in vitro. Following HAP purification, this DNA
was used as tracer in a subtractive hybridization
reaction. The driver was PCR-amplified cDNAs from pools of
5,000 clones made from the same 3 libraries. The pools
consisted of I.M.A.G.E. clones 260232-265223,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>^</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468 bp mRNA EST 03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                   School of Medicine way, Box 8501, St. )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      102; DB 71;
No. 3.49e-99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62;
                                                                                                                                                                                                                                                                                                                                                                                                       Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                         further information.
                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
```

```
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION ACCESSION
δÃ
                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE
                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1237 TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1118 CACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                         116 bbbttyttttttttwaagacagagtctcactctgtcacccaggctggagtkcagtggcgc 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    219 attgatagagatggt-ttt-gccacgttgcccaggctggtcttaaactcctgggctca 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101 gatcatgcctcgctgcgtacttgacctcatgg-gctcaagcgaccctcctgcctcagcct 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cctgagtagctgggaccaca-ggcacatacaacattcccagctaattttttgtatttttg 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human fet
C15363
g1570070
                                                                                                            7.1%;
l Similarity 76.2%;
176; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (13-MAY-1996) to the DDBJ/EMBL/GenBank databases. In the Collection of Collectio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fujiwara, T., Hirano, H., Hishigaki, H., Horie, M., Kawai, A., Kyushiki, H., Nagata, M., Okuno, S., Ozaki, K., Shimizu, F., Shinomiya, H., Suzuki, M., Takaichi, A., Takeda, S., Watanabe Maekawa, H., Nakamura, Y. and Takahashi, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ÉST(expressed sequence tag); l
Homo sapiens fetus brain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fujiwara,T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Otsuka cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens fetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            suka cDNA project
published (1996)
(bases 1 to 351)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (sites)
                                                                                                                                                                                                                                                        90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.2%;
larity 77.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fetal
                                                                                                                                                                                                                                                  /tissue_type="brain"
86 c 67 g
                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
1..351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>^</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="Pooled human pregnant uterus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           340488-345479, and 484488-489479
/clone="669475"
/clone_lib="Soares NhHMPu S1"
                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/clone="137E09"
                                                                                                                                                                                                                                                                                                            /dev_stage="fetus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              351
brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .>468
117 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA
                                                                                                            Score 100; DB 93;
Pred. No. 2.21e-96;
7; Mismatches 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 102; DB 10;
Pred. No. 3.49e-99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
5'-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GEN-137E09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127
                                                                                                                                                                                                                                                        98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA, clone:137E09
                                                                                                                                                                                                                                                        ۲+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fetal brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 melanocyte,
                                                                                                                                                                  Length 351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 468
                                                                                                                                                                                                                                                        10 others
                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fetal heart, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-SEP-1996
                                                                                                            7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hominidae;
                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shimada, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tsutomu
```

```
RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭥
Ş
                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                    망
                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                    Query Match
Best Local Similarity
Matches 186; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORDS
E
SANISM
1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292 --tagtagagmcggggtttcaccatgttggccaggctggtcttgaactcct 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cccgagtacctgggactacaggtgcacaccaccacacctggctaa--tttttgtatttt-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotas; mitochondrial eukaryotas; Metazoa; Chordata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 379)
Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M., Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M., Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F., Parsonskis, E., Waterston, R., Williamson, A., Wohldmann, P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g1785042
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA195351 379 bp mRNA EST zr33g12.s1 Soares NhHMPu S1 Homo sapiens cDN similar to contains Alu repetitive element;.
AA195351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. High quality sequence stop: 271.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1810
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wilson,R.
The WashU-Merck EST Project Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                 7.1%;
larity 78.5%;
Conservative
                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR amplified cDNAs from pools of 5,000 clones made from the same 3 libraries. The pools consisted of I.M.A.G.E. clones 260232-265223, 340488-345479, and 484488-489479."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/note="Organ: mixed (see below); Vector: pT7T3D-Pac
/note="Organ: mixed (see below); Vector: pT7T3D-Pac
/note="Organ: mixed (see below); Vector: pT7T3D-Pac
/note="Organ: ptf1"
/note
                                                                                                                                                                                                                                                                                                             complement(<1..>379)
103 c 87 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="Pooled human melanocyte,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="Soares NhHMPu S1"
                                                                                                                                                                                                                                                                                                                                                                             'lab_host="DH10B"
                                                                                                                                    Score 100; DB 2;
Pred. No. 2.21e-96;
0; Mismatches 44
                                                                                                                                                                                                                                                                                                                114
                                                                                                                                        44;
                                                                                                                                                                                                     Length 379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 14-FEB-1997
CDNA clone 665254 3'
                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     fetal heart, and
                                                                                                                                    7;
                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
                                                                                                                                        4;
```

Search completed: Wed Mar 25 13:54:24 1998 Job time: 470 secs.

THIS PAGE BLANK (USPTO)

Description:
Perfect Score:
N.A. Sequence:
Comp: Database: Database: Database: Database: Database Post-processing: Searched: Scoring table: Title: MPsrch_nn Nmatch llar output not generated. STD Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by IntelliGenetics, Inc. n.a. - n.a. database search, using Smith-Waterman algorithm 23:BCT1 24:BCT2 25:BCT3 26:BCT4 27:BCT5 28:BCT6 29:BCT7 30:BCT8 31:BCT9 32:BCT1 33:BCT11 34:BCT2 35:BCT3 30:BCT8 31:BCT9 32:BCT11 34:BCT12 35:BCT13 36:GEN1 37:GEN2 38:GEN3 39:GEN4 40:GEN5 41:GEN6 42:HTG1 43:HTG2 44:HTG3 45:HTG4 46:HTG5 47:INV1 48:LNV2 49:INV3 50:INV4 51:INV5 52:INV6 53:INV7 54:INV8 55:INV9 56:INV10 57:INV1 58:INV12 59:MAM1 60:MAM2 61:MAM3 62:VRT1 69:PAT4 60:PAT2 64:VRT3 65:VRT4 66:PAT1 67:PAT2 68:PAT3 69:PAT4 70:PAT5 71:PAT6 72:PAT7 73:PHG 74:PLN1 75:PLN2 76:PLN3 77:PLN4 78:PLN5 79:PLN6 80:PLN7 81:PLN8 82:PLN9 83:PLN10 84:PLN11 85:PLN12 86:PR11 87:PR12 88:PR13 89:PR14 90:PR15 91:PR16 92:PR17 93:PR18 94:PR19 95:PR110 96:PR111 97:PR112 98:PR113 99:PR114 100:PR115 101:PR116 102:PR117 103:ROD1 104:ROD2 105:ROD3 106:ROD4 107:ROD5 108:ROD6 109:ROD7 110:ROD8 111:ROD9 112:STR 113:SYN genbank-new7 126:BCT 127:GEN 128:HTG1 129:HTG2 130:INV 131:MAM 132:VRT 133:PHG 134:PLN1 135:PLN2 136:PRI1 137:PRI2 138:ROD 139:SYN 140:UNA 141:VRL u-emb151_101 142:part1 143:part2 genbankb101 115:VRL1 116:VRL2 117:VRL3 118:VRL4 119:VRL5 120:VRL6 121:VRL7 122:VRL8 123:VRL9 124:VRL10 125:VRL11 Minimum Match 0% Listing first 45 summaries 1415 genbanka101 23:BCT1 2 430261 seqs, 710217276 bases x 2 Dbase 0; Query 0 TABLE default Gap 6 >US-08-236-918A-7 (1-1415) from 5674704.seq Wed Mar 25 12:55:36 1998; 1:BCT 2:FUN 3:GEN 4:HTG1 5:HTG2 6:HTG3 7:HTG4 8:HUM1 9:HUM2 10:HUM3 11:INV1 12:INV2 13:ORG 14:MAM 15:VRT 16:PLN 17:PRO1 18:PRO2 19:ROD 20:SYN 21:UNC 22:VIR 114 : UNA MasPar time 1516.90 Seconds 1325.012 Million cell updates/sec (MT)

and is derived by analysis of the total score distribution

SUMMARIES

ი	c	0.0	a	ი			ი	ი		ი	ი			o		•	י כ	ם כ)		O	O	ი	ဂ	ი			ი	C	ი	n ·	o		c)							Res
45	44) V	41	40	39	38	37	36	ω	34	ω ω	32	31	31	2 6	20.) i) N	J .	ע	22	21	20	19	18	17	16	15	14					ه م	> ~	1 თ	٠ 0	4-1	ω	N	_	No.
⊢	118	4 د	4 د	\mathbf{L}	\vdash	\vdash	\vdash	\mathbf{L}	\vdash	\vdash	\vdash	\vdash	\vdash		v	S	S	J٨	JA	JΚ	N	N	N	N	Ν	Ν	Ν	Ν	Ν	N	N	N	N E	u c) K) N	N	w	w	7	_	Score
	ω c							•														•	•		٠				•								•		5		Õ ¦	+ 1.00 ± 10 ±1 ±
1067	142396	10704	2909	320	372	68	85	9	067	707	542	609	395	3702	200	000	750	7,00	100	9 6	2509	2509	89	2468	6627	3724	1260	9662	4519	19	0000	0000	25.0	7 4 6	200	0023	830	94	5	41	41	7
44	890	£27	88	86	92	92	100	89	44	87	91	87	94	88	Д (лс	o 0	9 5	1 0 7	α n σ	, u	42	σ	128	45	88	45	9	128	υı	UI	5	90	4 4 00		128	G	0	108	99	94	BB
115	SACOO	HCCCC240	23	HUMGPIIB2	SL81575	3	듞	HSAC000966	2	HS214K23	8	36	SU105	506G2B	2000	מ מ		0.0000000000000000000000000000000000000	100	300	AC204	00204	HS44N10	2	445	C	8N0	č	HS339A1	S339A	SAC12	3	35	HS16/719	1 5	S341D	90013	UMTRPM	검	-	HSU03397	Ħ
n DNA sequence	ς,	A NI PNICKACING IN	DNA sequence f	n platelet Glyco	sapiens (subclo	sapiens (subclo	an NFG genomic f	sapiens (subc	Human DNA sequence **	n DNA sequence	n DNA sequence	n DNA sequence	n DNA sequence	uman DNA s	** SEQUENCING IN	, (I	n DNA sequence	all DNA	ipiens (subci	sapiens (subci	SEQUENCING IN	** SEQUENCING IN	uman DNA sequence	ä	DNA sequence *	DNA	DNA sequence *	BAC clone	an DNA sequence	uman DNA sequence	** SEQUENCING IN	SECUENCING IN	for L-hi	Saniens equence	n DNA sequence *	an DNA sequence	DNA sequence **	Human TRPM-2 protei	se T-cell recept	activation de	ptor pr	scriptio
.80e-6	800	0.000	.80e-60	.80e-6	80e-6	.80e-60	5.80e-	.80e-6	.10e-6	.10e-6	.10e-6	.10e-6	.10e-6	10e-6	070-6	070	070	2.07e-	. 070-61	/e-6	.35e-6	.35e-6	.35e-6	7.35e-	.35e-6	.90e-6	90e-6	.90e-62	2.60e-	.60e-6	.87e-6	870-6	870 670 670	ם הים	.12e-6	9.12e-	94e-68	2.06e-6	00e-	00e+0	.00e+00	red. N

ALIGNMENTS

JOURNAL	TITLE		AUTHORS	REFERENCE			ORGANISM	SOURCE	KEYWORDS	NID	ACCESSION	DEFINITION	LOCUS	RESULT 1
ligand Eur. J. Immunol. 24 (9), 2219-2227 (1994)	Din, W.S. and Goodwin, R.G. Molecular and biological characterization of human 4-1BB and its	Armitage, R.J., Falk, B., Roux, E., Baker, E., Sutherland, G.R.,	Alderson, M.R., Smith, C.A., Tough, T.W., Davis-Smith, T.,	1 (bases 1 to 1415)	Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo.	Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;	Homo sapiens	human.	•	g571320	U03397	Human receptor protein 4-1BB mRNA, complete cds.	HSU03397 1415 bp mRNA PRI 15-NOV-1994	

Statistics:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,

Mean 11.786; Variance 6.409; scale 1.839

```
MEDLINE
REFERENCE
AUTHORS
TITLE
 밁
                   Š
                                           밁
                                                                 δ
                                                                                          밁
                                                                                                                   δÃ
                                                                                                                                              밁
                                                                                                                                                                   δõ
                                                                                                                                                                                          В
                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                  멼
                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                      5 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Simi
Matches 1415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                         481
                                                481
                                                                         421
                                                                                                421
                                                                                                                          361
                                                                                                                                                                           301
                                                                                                                                                                                                 301
                                                                                                                                                  361
                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                           -
                     CCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGGCAGGATGCAGCA
                                                                                                                                                                                      ggaatcagatttgcagtccctgtcctccaaatagtttctccagcgcaggtggacaaagga
                                                                                                                                                                                                                                                                         CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA
                                                                                                                                                                                                                                                                                      caagatcattgcaggatccttgtagtaactgcccagctggtacattctgtgataataaca
                                                                                                                                                                                                                                                                                                                                                                                      ttgattaaaattctcttggaatcagctttgctagtatcatacctgtgccagatttcatca 120
                                                                                                                                                                                                                                                                                                                                                                                                                         ccagcaatgcagagtgtgactgcactccagggtttcactgcctgggggcaggatgcagca
                                                                                                                                                                        GGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGA
                                                                                                                                                                                                                                                                                                                                       tgggaaacagctgttacaacatagtagccactctgttgctggtcctcaactttgagagga 180
                                                                                                                                                                                                                                                                                                                                                                           TTGATTAAAATTCTCTTGGAATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCA 120
                                                                                                                                                                                                                                                                                                                          TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA
tggatggaaagtctgtgcttgtgaatgggacgaaggagagggacgtggtctgtggaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (10-NOV-1993) Mark Alderson, Development Corp., 51 University St., Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94374434
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alderson, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="4-1BB"
/product="4-1BB"
/db_xref="prD:9571321"
/translation="MGNSCYNIYATILLVLNFERTRSLODPCSNCPAGTFCDNNRNQI
CSPCPPNSFSSAGGQRTCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMC
EQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSYLVNGTKERDVVCGP
SPADLSPGASSVTPPAPAREPGHSPQIISFFLALTFTALLFILTEFFLTLRFSVVKRGRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="encodes
678..758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /nute="nomology to the receptors for TNF and NGF; homolog of murine T-cell receptor 4-1BB protein; transmembrane protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="encodes transmembrane 332 c 333 g 365 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="encodes potential 564..566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL 531..533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/tissue_type="peripheral
/cell_type="T cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1415)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
0; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         e 1415; DB 94;
. No. 0.00e+00;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         glycosylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glycosylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plood"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Immunex Seattle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WA 98101,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  187-208
                                                                                                                       420
                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
Ş
           밁
                      δÃ
                                  밁
                                            δÃ
                                                         밁
                                                                    Š
                                                                                밁
                                                                                           QΥ
                                                                                                        밁
                                                                                                                   ğ
                                                                                                                              밁
                                                                                                                                        Qy
                                                                                                                                                      밁
                                                                                                                                                                Qy
                                                                                                                                                                            밁
                                                                                                                                                                                       δÃ
                                                                                                                                                                                                    밁
                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                  Ş
 1381
                                               1261
                                                                      1201
                                                                                 1201
                                                                                             1141
                                                                                                         1141
                                                                                                                    1081
                                                                                                                               1081
                                                                                                                                                                 961
                                                                                                                                                                             961
                                                                                                                                                                                         901
                                                                                                                                                                                                                841
                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                661
gtagctgccgatttccagaagaagaagaaggaggatgtgaactgtgaaatggaagtcaat
                                                                                                                                                                                                                                                                                    tgttgtacaggctggtctcaaactcctaggttcactttggcctcccaaagtgctgggatt
                                                                    gtctcactctgtcacccaggctggagtgcagtggcaccaccatggctctctgcagccttg
                                                                                                                                                ctccagccgacctctcccgggagcatcctctgtgaccccgcctgcccctgcgagagagc
                                                                                                                                                                        GTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCACCATGGCTCTCTGCAGCCTTG
                                                                                                                                           TTTCAAAAGCAAGAACACCATCCTACATAATACCCAGGATTCCCCCAACACACGTTCTTT
                                                                                                                                                                                        AGGGCTGTTGGGACTTTCTTGAAAAGAAGCAAGGAAATATGAGTCATCCGCTATCACAGC
                                                                                                                                                                                              agggctgttgggactttcttgaaaagaagcaaggaaaatatgagtcatccgctatcacagc
                                                                                                                                                                                                                                                                                                                                  1200
                                                                                                                              1140
                                                                                                                                          1080
                                                                                                                                                                            1020
                                                                                                                                                     1080
                                                                                                                                                                 1020
                                                                                                                                                                                         960
                                                                                                                                                                                                               900
                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                                                                                                   600
```

REFERENCE AUTHORS SOURCE ORGANISM ACCESSION RESULT LOCUS NID KEYWORDS N 9292237 g292237 cell surface receptor; nerve homologue; tumor necrosis fac Human L12964 Eukaryotae; mitochondrial eukaryotes; Metaz; Vertebrata; Eutheria; Primates; Catarrhini; 1 (bases 1 to 1419)
Schwarz, H., Tuckwell, J. and Lotz, M. Homo sapiens cDNA Homo sapiens HUMILAX activation 1419 9 bp mRNA dependent T rve growth factor factor receptor. T cell mRNA, Metazoa; PRI complete receptor; Hominidae; human Homo

```
polyA_signal
polyA_site
BASE COUNT 37.
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
   밁
                   δÃ
                                             밁
                                                                      Š
                                                                                                  멼
                                                                                                                      γ
                                                                                                                                                  망
                                                                                                                                                                           Š
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 1394; Conse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                           421
                                                 441
                                                                           361
                                                                                                                            301
                                                                                                                                                    321
                                                                                                                                                                              241
                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                               121
  501
                                                                                                  381
                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                           21
                                                                                                                                                                                                                                                                                                                                                                                 ш
                                                                                                                                                                                                                                                                                                                                                                              agtggaaagttctccggcagccctgagatctcaagagtgacatttgtgagaccagctaat
                                                                                                                                                                                                                                                                                           tgggaaacagctgttacaacatagtagccactctgttgctggtcctcaactttgagagga
                                                                                                                                                                                                                                                                                                                             ccagcaatgcagagtgtgactgcactccagggtttcactgcctggggggcaggatgcagca
                                                                                                                                        GGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGA
                                                                                                                                                                                          ggaatcagatttgcagtccctgtcctccaaatagtttctccagcgcaggtggacaaagga
                                                                                                                                                                                                                              CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA
                                                                                                                                                                                                                                          caagatcattgcaggatccttgtagtagctgcccagctggtacattctgtgataataaca
                                                                                                                                                                                                                                                                              TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA
gctttgggacatttaacgatcagaaacgtggcatctgtcgaccctggacaaactgttctt
                                                                          CCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAGGATGCAGCA
                                                                                                                           Direct Submission
Submitted (22-APR-1993) Schwarz H.,
for Research on Agging, University o
Jolla, CA 92093-0663, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A receptor induced by lymphocyte activation (ILA): a new member of the human nerve-growth-factor/tumor-necrosis-factor receptor family Gene 134 (2), 295-298 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 1419)
Schwarz, and H. TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94085794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               373
                                                                                                                                                                                                                                                                                                                                                                                                                                97.48;
larity 99.68;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="ILA= ind
Human receptor |
U03397"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1369..1374
1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/db_xref="pl1:g292238"
/db_xref="pl1:g292238"
/translation="MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQI
CSPCPPNSFSSAGGQRTCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGGSMC
EQDCRQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGF
SPADLSPGASSVTPPAAPAREPGHSPQIISFELALTSTALLFILTFFLTLRFSVVKRGRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL' 908..1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="ILA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="ILA"
140..907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140..907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/cell_type="transformed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /ce11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _line="SLB-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
0; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              induced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                duced by
                                                                                                                                                                                                                                                                                                                                                                                                                                re 1378; DB 99;
d. No. 0.00e+00;
Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lymphocyte encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T lymphocyte'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of California,
                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenBank Accession Number
                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stein Inst.
San Diego,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                  440
                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                          420
                                                                                                                           360
                                                                                                                                                    380
                                                                                                                                                                            300
                                                                                                                                                                                                     320
                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                La
                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

```
RESULT 3
LOCUS
DEFINITION
ACCESSION
                NID
KEYWORDS
SOURCE
                                                                                             Š
                                                                                                              맑
                                                                                                                             δÃ
                                                                                                                                                Вb
                                                                                                                                                               δÃ
                                                                                                                                                                                  밁
                                                                                                                                                                                                 Q
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                        D.
                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
ORGANISM
                                                                                               1380
                                                                                                                                1320
                                                                                                              1400
                                                                                                                                                 1340
                                                                                                                                                                                                    1200
                                                                                                                                                                                                                                       1141
                                                                                                                                                                                                                                                       1161
                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                        1101
                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                             981
                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                  861
                                                                                                                                                                                                                                                                                                                                                                                                921
                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                                                                                                                                                                                                           | aagggccaccacacctgactaactttttttgtttttgtt-ggtaaagatggcatttcgcc
                                                                                                                                                                                                                                                                                gtctcactctgtcacccaggctggagtgcagtggcaccaccatggctctctgcagccttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgtatatattcaaaccatcttatgagaccagtacaaactactcaagaggaagatggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctccagccgacctctcccgggagcatcctctgtgaccccgcctgcccctgcgagagagc
                                                                                                      atgaggacagagctggtgat 1419
                                                                                                                              atgttgtacaggctggtctcaaactcctaggttcacttttggcctcccaaagtgctgggat
                                                                                                                                                                                                                                              acctctgggagctcaagtgatcctcctgcctcagtctcctgagtagctggaactacaagg
                                                                                                                                                                                                                                                                                                                  tttcaaaagcaagaacaccatcctacataatacccaggattccccccaacacacgttcttt
                                                                                                                                                                                                                                                                                                                                                                                       agggctgttgggactttcttgaaaaggaagcaaggaaatatgagtcatccgctatcacagc
                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAGGACAGAGCTGGTGAT
                                                                                                                                                                 ATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGGCCTCCCAAAGTGCTGGGAT
                                                                                                                                                                                                  ACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCT-AGTAGCTGGAACTACAAGG
                                                                                                                                                                                                                                                                       GTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCATGGCTCTCTGCAGCCTTG
                                                                                                                                                                                                                                                                                                                                            TTTCAAAAGCAAGAACACCATCCTACATAATACCCAGGATTCCCCCAACACACGTTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                 GTAGCTGCCGATTTCCAGAAGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGGCTGTTGGGACTTTCTTGAAAAGAAGCAAGGAAATATGAGTCATCCGCTATCACAGC
                        MUSTC41BB 235
Mouse T-cell rec
J04492
g201121
T-cell receptor
mRNA.
Mus musculus
              Mouse (strain
                                                 2350 bp
receptor
               C57BL/6) I-lymphocyte
                                                                                             1399
                                                mRNA
4-1BB I
                                                protein
                                                 mRNA,
                 cell lines
                                                          ROD
                                                 lete
                L2 and L3,
                                                15-SEP-1989
e cds.
                CDNA
                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                          1100
                                                                                                                                                                                                                                                                                                                                          1020
                                                                                                                                                                                                                                                                                                                                                            1040
                                                                                                                                                                                                                   1279
                                                                                                                                                                                                                                     1199
                                                                                                                                                                                                                                                                                        1160
                                                                                                                                                                                                                                                                                                                                                                               960
                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                920
                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                ç
```

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                    밁
                                             δã
                                                                            밁
                                                                                                            δÃ
                                                                                                                                             밁
                                                                                                                                                                           δã
                                                                                                                                                                                                           В
                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mat_peptide
                                                   589
                                                                                 615
                                                                                                                   529
                                                                                                                                                                                472
                                                                                                                                                                                                                495
                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                               435
                                                                                                                                                                                                                                                                                                               352
                                                                                                                                                                                                                                                                                                                                             375
                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                           315
                                                                                                                                                                                                                                                                                                                                                                                                                                          232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112
                  672
                                                                                                                              dgaactgctctctagacggaaggtctgtgcttaagaccgggaccacggagaaggaacgtgg 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                             agaa-aatacaatccag-tctgcaagagctgccctccaagtaccttctcccagcataggtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atttcgdcatghgdaadaackgttacaacggtggtggtcattgtgctgctgctagtgggct 197
agggaggaccaggagggcactccttgcaggtccttaccttgttcctggcgctgacatcgg
                                                                      tgtgtggaccccctgtggtgagcttctctccc--agta-ccaccatttctgtgactccag
                                                                                                                 CAAACTGTTCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGG
                                                                                                                                                                                AAGACTGTTGCGTTTGGGACATTTAACGATCAGAAACGT---
                                                                                                                                                                                            aaacctgtagcttgggaacatttaatgaccagaacggtactggcgtcctgtcgaccctgga 554
                                                                                                                                                                                                                                                GATGCAGCATGTGTGAACAGGATTGTAAACAAGGTCAAGAACTGACAAAAAAAGGTTGTA 471
                                                                                                                                                                                                                                                                agtgcaccagatgtgaaaaggactgcaggcctggccagggagctaacgaagcagggttgca 494
                                                                                                                                                                                                                                                                                                                              gctcctctacccacaacgcggagtgtgagtgcattgaaggattccattgcttggggccac 434
                                                                                                                                                                                                                                                                                                                                                                             ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gtgagaaggtgggagccgtgcagaactcctgtgataactgtcagcctggtactttctgc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTTCATCATGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACT 171
                                                  TCTGTGGACCATCTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCC
                                                                                                                                                                                                                                                                                                             GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2350)

Kwon,B.S. and Weissman,S.M.

CDNA sequences of two inducible T-cell genes

Proc. Natl. Acad. Sci. U.S.A. 86, 1963-1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Rodentia; Sciurognathi; Myomorpha; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unreported.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B.S.Kwon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   h 16.5%;
Similarity 69.1%;
530; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89184547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry and clean copy of sequence for [1] kindly provided won, 17-MAR-1989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρι
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/db_ref="pID:g201122"
/translation="MGNNCYNVVVIVLLLVGCEKVGAVQNSCDNCQPGTFCRKYNPVC
KSCPPSTFSSIGGQPNCNICTRVCAGYFFKKFCSSTHNABCECLEGFHCLGPQCTRCE
KDCRPGQELTKQGCKTCSLGTRNDQNCTGVCRPWTNCSLDGRSYLKTGTTEKDYVCGP
FVVSFSSSTTISYTPEGGPGHSLQVLTLFLALTSALLALIFITLLFSVLKWIRKKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PHIFKQPFKKTTGAAQEEDACSCRCPQEEEGGGGGYEL"
215..913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers 1..2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
146..214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="4-1BB protein precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="4-1BB protein
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="4-1BB protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to 2350)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 233; DB 108;
Pred. No. 1.00e-145;
0; Mismatches 225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     đ
                                                                                                                                                                                -GGCATCTGTCGACCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                 671
                                                                                                                                                                                                                                                                                                               411
                                                                                                                                                                                                                                                                                                                                                                                                           374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314
                                                  648
                                                                                                                 588
                                                                                                                                                                                528
                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        œ
```

```
JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SEGMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
Š
                         문
                                              δÃ
                                                                         뮹
                                                                                                Qγ
                                                                                                                             닭
                                                                                                                                                   δÃ
                                                                                                                                                                             밁
                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                    1179
                                                                                                                                                      1119
                                                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                      624 ttttttttttttttgagacagggtctcactctgtcaccccaggctggagtacagtgatgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                649
                                                                                                                             743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttg-taaacatggggtttggccatgttgcccaggctggtctcaaactcctaagctcaagt
                                                                                                                                                                   atcatgtttcactgcagcttcgacctcctgg-gttcaggtgatcctcccacctccagcctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aggaagatgcttgtdagdtgdcgdtgtccacaggaagaagaagaaggagga
 TGGCCTCC
                         aatcctcc
                                                                                                                 ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGAAACTCCTGTATATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggaaaaaattcccccadatattcaagcaaccatttaagaagaccactggagcagctcaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTT
                                                                                                    TTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAAGATGGCTGTAGCTGCCGATTTCCAGAAGAAGAAGAAGAAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMTRPM2A2
Human TRPM-2 |
M63377
                                                                                                                                                                                                                                                                                                                                                                                                              Eur. J. 1
94237156
                                                                                                                                                                                                                                                          l Similarity
197; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                       Molecular characterization of human TRPM-2/clusterin, associated with sperm maturation, apoptosis and neuroceur. J. Biochem. 221 (3), 917-925 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genomic organization and expression of the gene, a gene implicated in apoptosis J. Biol. Chem. 268 (7), 5021-5031 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wong, P., Taillefer, D., Lakins, J., Pineault, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wong, P., Pineault, J., Lakins, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata,
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRPM-2 protein.
2 of 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tenniswood, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93186813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g292839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 940)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tenniswood, M.
                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                       9.3%;
llarity 79.4%;
Conservative
 1305
                         869
                                                                                                                                                                                                                                                                                                                       /number=4
1 219 c
                                                                                                                                                                                                                                                                                                                                                          /organism="Homo
155..325
                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                              /gene="TRPM-2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          940 bp
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           npricated in apoptosis
268 (7), 5021-5031 (19
                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                       Score 131; DB 101;
Pred. No. 2.06e-69;
0; Mismatches 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene,
                                                                                                                                                                                                                                                                                                                        263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                      sapiens"
                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Taillefer, D.,
                                                                                                                                                                                                                                                                                                                        ct
                                                                                                                                                                                                                                                          48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRI
                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rat
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chader,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRPM-2 (clusterin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Leger, J., Wang, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                     neurodegeneration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-AUG-1996
                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>۾</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ното.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                   1297
                                                                            861
                                                                                                     1237
                                                                                                                                                       1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               768
                                                                                                                              802
                                                                                                                                                                               742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       788
```

DIN

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence: dJ390013
                                      sequence:
sequence:
sequence:
sequence:
sequence:
sequence:
sequence:
                                                                                                                                                                   sequence:
sequence:
sequence:
sequence:
sequence:
                                                                                                                                                                                                                                                                              sequence:
sequence:
                                                                                                                                                                                                                                                                                                                                        sequence:
sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence:
sequence:
sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence:
sequence:
sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence: dJ390013
sequence: dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            with foreign sequence from of segments is not known; {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence may contaminated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cambridgeshire, CB10 1SA, UK. E-mail enquires: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk IMPORTANT: This sequence is unfinished and does not necessarily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (06-NOV-1996) Wellcome Trust Cambridgeshire, CB10 15A, UK. E-mail en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human DNA sequence ** 390013; HTGS phase 1.
                                                                                                                                                                                                                                                                  sequence:
                                                                                                                                                                                                                                                                                                                                                                                                sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HS390013
     sequence:
                       sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                      sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the release of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aryotae; mitochondrial eukaryotes; Metazoa; Chordata;
tebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo
(bases 1 to 158305)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTGS_PHASE1.
                                    d7390013
d7390013
d7390013
d7390013
d7390013
d7390013
d7390013
d7390013
d7390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dJ390013
dJ390013
dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                       dJ390013
dJ390013
dJ390013
dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dJ39001
dJ39001
                                                                                                                                                                                                          dJ39001
dJ39001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dJ390013
dJ390013
                                                                                                                                                                                                                                                                  дл390013
                                                                                                                                                                                                                                                                                                       dJ39001
                                                                                                                                                                                                                                                                                                                                                                                                  dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                      dJ39001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dJ390013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dл3900:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   change as work continues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           correct sequence. Work on the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID: 00607
Contig_ID: 01014
Contig_ID: 00221
Contig_ID: 00328
Contig_ID: 00656
Contig_ID: 00423
Contig_ID: 00388
Contig_ID: 00386
Contig_ID: 00756
Contig_ID: 00756
Contig_ID: 00491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          known; 800 n's separate segments
   Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                          Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   data is based on the understanding that the as work continues. The sequence may be
                                                                                                                                                                                        Contig_
                                                                                                                                                                                                            Conti
                                                                                                                                                                                                                             Conti
                                                                                                                                                                                                                                             Contig_ID:
                                                                                                                                                                                                                                                                  Conti
                                                                                                                                                                                                                                                                                   Contig_ID:
                                                                                                                                                                                                                                                                                                       Contig_ID:
                                                                                                                                                                                                                                                                                                                      Contig_ID:
                                                                                                                                                                                                                                                                                                                                            Contig_ID:
                                                                                                                                                                                                                                                                                                                                                           Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                               Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                              Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                    Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                     Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contig_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCING
                                                                                                                                                                       ig_ID:
                                                                                                                                                                                                            _g_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         .g_ID:
                                                                                                                                                                                                                             g_ID:
                                                                                                                                                                                                                                                                                                                                          00685
00630
00630
006180
006180
00680
00948
00948
01083
01083
00489
00583
00716
00716
00671
00683
     00435
00525
00564
00597
00697
00401
00759
00759
00725
00725
00725
00725
00725
00725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IN PROGRESS
                                      Length:
Length:
                                                                           Length:
Length:
Length:
Length:
Length:
Length:
Length:
Length:
Length:
Length:
                                                                                                                                                                                                                                                              Length:
Length:
Length:
Length:
                                                                                                                                                                                                                                                                                                                                        Length:
Length:
Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lengi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vector, phage etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence
                                                                                                                                                                                                                                                                                                                                                                                          1173 bp Unfinished
1188 bp Unfinished
11779 bp Unfinished
1178 bp Unfinished
1178 bp Unfinished
1188 bp Unfinished
1189 bp Unfinished
1189 bp Unfinished
1189 bp Unfinished
1189 bp Unfinished
1184 bp Unfinished
1185 bp Unfinished
1185 bp Unfinished
1185 bp Unfinished
1186 bp Unfinished
1188 bp Unfinished
1189 bp Unfinished
750 be unfinished 7670 by Unfinished 1849 by Unfinished 1849 by Unfinished 1895 by Unfinished 1925 by Unfinished 1925 by Unfinished 1929 by Unfinished 1923 by Unfinished 12133 by Unfinished 12759 by Unfinis
                                                                                                                                                                                                  1457 bp Unfinished
1818 bp Unfinished
1262 bp Unfinished
2095 bp Unfinished
2095 bp Unfinished
2032 bp Unfinished
2035 bp Unfinished
2950 bp Unfinished
2950 bp Unfinished
3559 bp Unfinished
3642 bp Unfinished
3642 bp Unfinished
3643 bp Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Campus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-JAN-1997
from clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hinxton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in progress
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 133300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       133120 tttctttttttttgagacagggccttgctctgtcacctaggctggagtgcagtggtgtgat 133179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1061
                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ngtagagatggggtttcaccatattggccaggctggtctcaaactcctgggctca 133354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           catgattcactgcagcctcgacctccccaggctcaggtgatcctcccacatcagccccct 133239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -AGTAGCTGGAACTACAAGGAAGGGCCACCACACCTGACTAACTTTTTTTGTTTTTTGTTT 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gagtagctgggactacaagtgcgtgccactacacctggctaatttttgtattttcttttg 133299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCT 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCCAGGCTGGAGTGCAGTGGCACCAC 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184;
                                                                                                                                                                                                                                                                                                                                                            Submitted (20-JUL-1997) Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquires: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk IMPORTANT: This sequence is unfinished and does not necessarily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence: dJ390013
                                                         *by a
                                                                                                                                                                           with foreign sequence from E.coli, yeast, vector, phage etc. of segments is not known; 800 n's separate segments. Unfinis sequence: dJ341D10 Contig_ID: 00214 Length: 49412 bp Unfin sequence: dJ341D10 Contig_ID: 00359 Length: 50022 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           * the sequence data presented in this record will be replaced *by a single finished sequence with the same accession number.
                                                                                                                                                                                                                                                             contaminated
                                                                                                                                                                                                                                                                              the release of this data is based on the understanding that the sequence may change as work continues. The sequence may be
                                                                                                                                                                                                                                                                                                                                           represent the correct sequence. Work on the sequence is in progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Buck, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG; HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            341D10; HTGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HS341D10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.1%;
Similarity 78.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    * This sequence is unfinished. When sequencing is complete,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *** WARNING: Phase 1 High Throughput
                                                                                                                                       *** WARNING:
                                                                            This sequence is unfinished. When sequencing is complete, the sequence data presented in this record will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 100234)
                                 sequence data presented i
single finished sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1..158305
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /chromosome="X"
24148 c 2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/clone="390013"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100234 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                       Phase 1 High Throughput Genome Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phase 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contig_ID: 01019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 129; DB 45; 1
Pred. No. 5.94e-68;
0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36900
                                                           with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN PROGRESS ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   đ
                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37694 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              record will be replaced
                                                           same accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 158305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3698 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-JUL-1997 from clone
                                                                                                                                                                             bp Unfinished
bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              *
                                                                                                                                                                                                                       Unfinished
                                                           number.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

_ = = = = =

=

```
RESULT
ACCOMMENT
       용
                                                 δÔ
                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                   Query Match 8.9%;
Best Local Similarity 79.6%;
Matches 183; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                     74992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74992 ttttttttttttttgagatggagtctcactctgtcacccaggctggagtgcagtggcatg
     75052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HS341D10
Z97985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1119
                                                                                                                                                                                                                                                         Sequence 100234 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                               Order of segments is not known; 800 n's separate Unfinished sequence: dJ341D10 Contig_ID: 00214 Unfinished sequence: dJ341D10 Contig_ID: 00359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1059
                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contaminated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the release of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    represent the correct sequence. Work
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clonerequest@sanger.ac.uk
IMPORTANT: This sequence is unfinished and does not necessarily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, CB1
UK. E-mail enquires: humquery@sanger.ac.uk Clone requests:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (20-JUL-1997) to the EMBL/GenBank/DDBJ databases Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, CBl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-JUL-1997 (Rel. 52, Created)
22-JUL-1997 (Rel. 52, Last updated, Version 1)
Human DNA sequence *** SEQUENCING IN PROGRESS ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             with foreign sequence from E.coli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Buck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e1056721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -100234
                                                                                tttttttttttttgagatggagtctcactctgtcacccaggctggagtgcagtggcatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agagatgggatgggatttcaccatgttggccaggctggtctcaaacgcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atcctggctcactgcaacctctgcctcccgg-gttcaagtgattctcctgcctcagcctc 75110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
atcctggctcactgcaacctctgcctcccgg-gttcaagtgattctcctgcctcagcctc
                                                   TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CT-AGTAGCTGGAACTACAAGGAAGGGCCACCACCACCTGACTAACTTTTTTGTTTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of this data is based on the understanding that change as work continues. The sequence may be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="341D10"
/chromosome="X"
a 20917 c 21419
                                                                                                                                                                                                                                                                                                                                                         1..100234
                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/clone="341D10"
                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                           /chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.98;
                                                                                                                                                                                                                                                         29376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG;
                                                                                                                                                                                                                                                      A; 20917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21419
                                                                                                                                                                           Score 126; DB 5;
Pred. No. 9.12e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 126; DB 128;
Pred. No. 9.12e-66;
                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                      Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                      ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          yeast, vector,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    on
                                                                                                                                                                                                                                                   21419 G; 27472 T; 1050 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1050
                                                                                                                                                                                                     Length 100234;
                                                                                                                                                                                                                                                                                                                                                                                                                               Length: 49412
Length: 50022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 100234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CB10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75220
                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1SA,
                                                                                                                                                                                                                                                                                                                                                                                                                                 dd
dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1178
       75110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75170
                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ŋ
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agagatgggatgggatttcaccatgttggccaggctggtctcaaacgcct 75220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
  sequence: dJ167P19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human DN
167P19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (06-NOV-1996) Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquires. hunguery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk IMPORTANT: This sequence is unfinished and does
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of segments is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z9301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contaminated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       represent the correct sequence. Work on the sequence is in progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vaudin, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HS167P19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      naman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               karyotae; mitochondrial eukaryotes; Metazoa; Chordata;
rtebrata; Eutheria; Primates; Catarrhini; Hominidae; H
(bases 1 to 125492)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   release of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA sequence
); HTGS phase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phase 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ***
dd 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   known;
                                                             Contig_II
Contig_II
Contig_II
                                                                                                                                              Contig_I
                                                                                                                                                                                      Contig_I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contig_II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              data is based on the understanding that the as work continues. The sequence may be
                                                                                                                                                                                                                                                                                                                                                                                                            Contig_J
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                               Contig_I
                                                                                                                                                                                                                                                                                                                              Contig_
                                                                                                                                                                                                                                                                                                                                                     Contig_I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contig_I
                                              Contig_
                                                                                                                                                                                                                                Contig_I
                                                                                                                                                                                                                                                 Contig_
                                                                                                                                                                                                                                                                       Contig_1
                                                                                                                                                                                                                                                                                          Contig_1
                                                                                                                                                                                                                                                                                                                                                                          Contig_I
                                                                                                                                                                                                                                                                                                                                                                                             Contig_I
                                                                                                                                                                                                                                                                                                                                                                                                                                        Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 800 n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E.coli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     00464
                                                                                                                                                                                                                                                                                                                                                                                                                       00262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   separate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG
PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Length:
Length:
Length:
Length:
Length:
                                                             Length
  Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Leng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Leng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
                                            Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           segments. Unfinished th: 974 bp Unfinished
militation of the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phage etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1178
```

```
RESULT
ID H
AC AI
NI di
DT 2:
DT 2:
DT 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ery Match
st Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121554
                                                                                                                                                                                                                                                                                                                                                                                                                                             HSAB1901
AB001901;
d1112091
                                                                                                                                                                                                                                                                                                                                                              26-JUL-1997 (Rel. 52, Created)
26-JUL-1997 (Rel. 52, Last updated,
Homo sapiens PACE4 gene, exon 4-7.
alternative splicing; PACE4.
Homo sapiens (human)
                                                                                                          Tsuji A.,
Bando M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1287
                                                      "Genomic organization and alternative splici
(SPC4), kexin-like processing endoprotease";
J. Blochem. 122:438-452(1997).
                                                                                                                                                                                      Submitted (14-MAR-1997) to the EMBL/GenBank/DDBJ databases. Yoshiko Matsuda, The University of Tokushima, Department of Biological Science and Technology; Minamijosanjima-cho 2-1, Tokushima, Tokushima 770, Japan
                                                                                                                                                                                                                                                                                                                  Homo.
                                                                                                                                                                                                                                                                                                                                  Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                       (E-mail:matsuda@bio.tokushima-u.ac.jp, Tel:0886-56-7523
                source
                                              Key
                                                                                                                                                                                                                                                                     Matsuda Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aggagttcgagaccagtctgggcaacatggcgaaaccccgtctctac-aaa-aaaaaata 121553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgggaggatcacttgagc-ccaagaggtcgaggctgcagtgagccgtgattgtgccacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCCTGCAGAGAGCCATGGTGGTGCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence: dJ167P19
sequence: dJ167P19
sequence: dJ167P19
sequence: dJ167P19
sequence: dJ167P19
sequence: dJ167P19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        *by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *** WARNING: Phase 1 High Throughput Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                        , Hine C., Tamai Y., Yonemoto K., Mori K., Akamatsu T., Matsuda organization and alternative sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence is unfinished. When sequencing is complete, the sequence data presented in this record will be replaced by a single finished sequence with the same accession number.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8.9%;
larity 81.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/clone="167P19"
/chromosome="X"
17764 c 18531 g 2915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1..125492
/organism="Homo
                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 126; DB 44;
Pred. No. 9.12e-66;
0; Mismatches 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8339
sapiens'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29152 t
                                                                                                                                                                                                                                                                                                                                                                                                               Version
                                                                                                  л Ж.
У.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         00987
00984
00502
00679
00982
00989
                                                                                          splicing
                                                                                                                         Mori K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Length:
Length:
Length:
Length:
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32872 others
                                                                                            0 f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 125492;
                                                                                             human PACE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                           Yoshida S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence

862 bp Unfinished
1076 bp Unfinished
1619 bp Unfinished
4041 bp Unfinished
4726 bp Unfinished
4736 bp Unfinished
843 bp

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             * * *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
```

Çp 밁 ç

FTHERE RADER RADER

ද В

밁 ф 밁

```
REFERENCE
AUTHORS
JOURNAL
                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 8339 BP; 1979 A; 2062 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261 ttttttttttttgacagggtcttgctgtgttgcccagactggagtgcagtggcaccaat 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tggagaggtggggtttcaccatgttgcccaggctggtctcaaaactcctgggctca 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       catggctcactgcagccttgacttcccag-gctcaagcaatcctttcacctcagtctcct 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCAC- 1120
                                                                                                                                                                                                                             J. Biol.
94117478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  187;
                                                                            Submitted (02-JUL-1993) to the DDBJ/EMBL/GenBank databases. Kimio Yatsunami, Japan Tobacco INC., Pharmaceutical Basic Research Lab.; 1-13-2 Fukuura Kanazawa-ku, Yokohama, Kanagawa 236, Japan (Tel:445-786-7690(ex.3390), Fax:045-786-7692) Submitted (02-JUl-1993) to DDBJ by:
                                                                                                                                                                                                                                                      Yatsunami,K., Ohtsu,H., Tsuchikawa,M., Higuchi,T., Shida,A., Shima,Y., Nakagawa,S., Yamauchi,K., Yaman Hayashi,N., Watanabe,T. and Ichikawa,A. structure of the L-histidine decarboxylase gene
                                                                                                                                                                        Yatsunami, K.
Unpublished (1993)
(bases 1 to 32351)
                                                                                                                                                                                                                                                                                                                                                Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                               Human gene
Yokohama, Kanagawa
             Japan Tobacco INC.
1-13-2 Fukuura, Kanazawa-ku
                                         Basic Research Lab
                                                                  Kimio Yatsunami
                                                                                                                                               Direct Submission
                                                                                                                                                             Yatsunami,K.
                                                                                                                                                                                                                                                                                                                                      Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                           L-histidine decarboxylase
                                                                                                                                                                                                                                                                                                                                                                                                                     D16583
                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMLHDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               h 8.8%;
Similarity 79.6%;
187; Conservative
                                                                                                                                                                                                                (bases 1 to 32351)
                                                                                                                                                                                                                                                                                                            (sites)
                                                    of Pharmaceutical
                                                                                                                                                                                                                                         Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /number=6
4912..5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2833..2909
/gene="PACE4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sequenced_mol="DNA"
800..910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /number=4
1434..1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="PACE4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /number=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="PACE4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               number=5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'gene="PACE4"
                                                                                                                                                                                                                                                                                                                                                                                                                               for L-histidine decarboxylase,
                                                                                                                                                                                                                                                                                                                                     Mammalia;
                                                                                                                                                                                                                                                                                                                                     mitochondrial eukaryotes; Meta
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                           DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                            32351 bp
                                                                                                                                                                                                                                         269 (2),
                                                                                                                                                                                                                                                                                                                                                                             clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 124; DB 8;
Pred. No. 2.60e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                         idine decarboxylase
1554-1559 (1994)
                                                                                                                                                                                                                                                                                                                                                                           lambda HDC[1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G; 2240 T; 25 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45;
                                                                                                                                                                                                                                                                                                                                                 Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                                                                                                                                                              PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                     Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                               complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                   Yamamoto,
                                                                                                                                                                                                                                                                                                                                                                           4].
                                                                                                                                                                                                                                                                                                                                                                                                                                            10-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                 cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
--
                                                                                                                     Research Lab.;
                                                                                                                                                                                                                                                                                                                                     Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ψ
```

FEATURES

```
GC_signal
TATA_signal
                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                    intron
                                                                                                                                                                                                                                                                    intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  045-786-7692.
                                                                                                                                                                                                                                                                                                                                                           /translation-"MMEPEEYRERGREMVDYICQYLSTVRERRVTPDVQPGYLRAQLP
ESAPEDDDSWDSIFGDIERI INDGVVHNQSPHHHAY PALITSPYSLLGDMLADAINCL
GFTWASSPACTELEMNYMDWLAKMLGLEBEFLHHHPSSQGGGVLOSTVSESTLIALLA
ARKNKILEMKTSEPDADESCLNARLVAYASDQAHSSVEKAGLISLVKNKELPVDDNFS
LRGEALQKA IEEDKQRGLVPVFVCATLGTTGVCAFDCLSELGF CARECLWLHIDAAY
AGTAFLCPEFRGFLKGIEYADSFTFNPSKWMMVHFDCTGFWVDKYKKQOTFSVNDF
LRGEALQKA IEEDKQRGLVPVFVCATLGTTGVCAFDCLSELGF CARECLWLHIDAAY
AGTAFLCPEFRGFLKGIEYADSFTFNPSKWMMVHFDCTGFWVDKYKLQOTFSVNDF
LRGEALQKA IEEDKQRGLVTERKAGPNCLTENVLKETAKAGRLFLIPATIQDKLIIRFTV
LRHANSGVATDFMHQITJSRRFRSVKLWFVIRSFGVKKLQAFFFLFATIQDKLIIRFTV
LRHANSGVATDFMHQITJSRRFRSVKLWFVIRSFGVKKLQAFFFLFATIQDKLIIRFTV
RNDPSFEIPAKHLGLVVFRLKGPNCLTENVLKEIAKAGRLFLIPATIQDKLIIRFTV
                                                                                                                                                                                                                                                                                                       TSQFTTRDDILRDWNLIRDAATLILSQHCTSQPSPRVGNLISQIRGARAWACGTSLQS
VSGAGDDPVQARKIIKQPQRVGAGPMKRENGLHLETLLDPVDDCFSEEAPDATKHKLS
SFLFSYLSVQTKKKTVRSLSCNSVPVSAQKPLPTEASVKNGGSSRVRIFSRFPEDMMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5733..5738
/note="CACC box"
6124..6129
                            /number=3
15461..15583
                                                                                                                                                               /number=2
9773..14490
                                                                                                                                                                                                                              9600..9772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7292..7296

/bound_moisety="LBP-1"
/bound_moisety="LBP-1"
/boin(7384..7414,9600..9772,14491..14604,15461..15583,
/join(7384..7414,9600..9772,14491..14604,15461..15583,
/bay-1.18381,18638..18781,19245..19311,20137..20299,
20391..20481,24567..24665,29671..29772,29907..30653)
/CC_number="4.1.1.22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /bound_moiety="GATA binding protein" 6895..6900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6788..6793
                                                                  14605..15460
                                                                                  'number=3
                                                                                                                                             /number=
                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                /number=
                                                                                                                                                                                                                                                                    7415..9599
                                                                                                                                                                                                                                                                                    LKKSAFKKLIKFYSVPSFPECSSQCGLQLPCCPLQAMV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="L-histidine decarboxylase"
/db_xref="PID:d1004531"
/db_xref="PID:g516771"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /bound_moiety="LBP-1"
7183..7188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6551..6555
                                                                                                       codon_start=1
                                                                                                                         4491..14604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /bound_moiety="LBP-1"
7278..7414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="TATA-like sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="CACC box"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bound_moiety="GATA binding protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bound_moiety="GATA binding protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="CACC box"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /bound_moiety="LBP-1 (leader-binding protein-1)"
592..5597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/clone_lib="EMBL3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bound_moiety="LBP-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bound_moiety="LBP-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="CACC box"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bound_moiety="GATA binding protein"
                                              RESULT
LOCUS
                                                                                                                         δÃ
                                                                                                                                                                 밁
                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                δð.
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                      皮
                                                                                                                                                                                                                                                                                                                                                                                                                                          γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 8.8%;
Best Local Similarity 75.7%;
Matches 206; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                              17093 accattattattatttttaaaaacagggcctggttctgtctcccaggctggagtgcagtg 17152
                                                                                                                                                                                                                                                                                                                         17212
                                                                                                                                                                                                                                              17272
                                                                                                                                                                                                                                                                                    1174
                                                                                                                           1293 CACTTTGGCCTCCCAAAGTGCTGGGATTACAG 1324
                                                                                                                                                                                                                                                                                                                                                             1114 GCACCACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCA 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                          1054 ACCACTTTTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTG 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                             ttttttg-tagagacagggtctcactatgttgtccaggctggtctcaaactcctggact 17330
                                                                                                                                                                                                                                                                                                         gcctcccacgtagctgggactacaggtgtgcaccactacacctggctttttgttttttgt 17271
                                                                                                                                                                                                                                                                                                                                                                                     gagccatcatggctcactgcagcctccatctcctgg-gcccaagcaatcctccaacctca 17211
                                                                                                                                                                                                      TITGITITGGTAAAGAIGGCATITICGCCAIGITGTACAGGCTGGTCTCAAACTCCTAGGTT 1292
                                                                                                                                                                                                                                                                                  GTCTCCTA-GTAGCTGGAACTACAAGGAAGGCCCACCACACCTGACTAACTTTTTTGTTT 1232
HSACO00012 100000 bp DNA HTG 03-OCT-1996
*** SEQUENCING IN PROGRESS *** EPM1/APECED region of chromosome
BAC clone B173L3; HTGS phase 1, 13 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29907..30962
/codon_start=1
/number=12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /number=11
29773..29906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /number=10
29671..29772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24666..29670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24567..24665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/number=10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /number=9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20482..24566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20391..20481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /number=8
20300..20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20137..20299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /number=6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /number=4
15584..18246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /number=8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /number=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /number=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19245..19311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'number-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               number=5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L8247..18381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /number=4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'number=9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        number=5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8638..18781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7026 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..20136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..19244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .20390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7405 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 125; DB 99; I
Pred. No. 4.87e-65;
0; Mismatches 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 32351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 3;
```

Gaps

ω

exon

21,

exon

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
ORIGIN
                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        URNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             * as runs of N as a convenience only. When sequencing is complete,

* the sequence data presented in this record will be replaced

* by a single finished sequence with the same accession number.

1 2134 4342: gap of unknown length

* 4343 7249: contig of 2913 bp in length

* 4343 7249: contig of 297 bp in length

* 9458: gap of unknown length

* 1186: contig of 2727 bp in length

* 1186: lagap of unknown length

* 11895 17603: contig of 3209 bp in length

* 11895 17604: gap of unknown length

* 11803 23481: contig of 3609 bp in length

* 23482 25690: gap of unknown length

* 23482 25690: gap of unknown length

* 29290 31498: gap of unknown length

* 31499 37457 contig of 3599 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (01-OCT-1996) Stanford Human Genome California Ave., Palo Alto, CA 94304, USA (bases 1 to 100000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 100000)
Quackenbush, J., Fan, J.-B., (
Contiguous Genomic Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (03-OCT-1996) Stanford Human Genome Center, 855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *** WARNING: Phase 1 High Throughput Genome Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Palo Alto, CA 94304 USA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 855 California Ave.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stanford Human Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: R.M. Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 California Ave., Palo Alto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quackenbush, J., Fan, J.-B., Cox, D.R., Myers, R.M. and Vollrath,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quackenbush,J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Region of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g1574906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC000012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence is unfinished. It consists of 13 contigs for which the order is not known; their order in this record is arbitrary. In some cases, the exact lengths of the gaps between the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the continuent the continue
                                                 16988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 100000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57674
59882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44857
47065
51201
53409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37453
39661
                                      using a transposon-mediated approach."
1 18331 c 19442 g 18704 t 26535 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1..100000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location
                                                                                                                   /note="Sequence data collected from 3kb subclones
(vector=pJF5 (J.-B. Fan, Stanford Human Genome Ce
using a transposor-mediated approach "
                                                                                                                                                                                                                                                                                                                                                           /clone="B173L3"
                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                          'clone_lib="Caltech/Research Genetics Whole-Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fan, J.-B., Cox, D.R., Myers, R.M. and Vollrath, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig of 5954 kg ap of unknown less of unknown less of 5196 kg ap of unknown less ontig of 4136 kg ap of unknown less ontig of 4265 kg ap of unknown less of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of unknown contig of 16577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of unknown length contig of 7576 bp in length gap of unknown length contig of 11550 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .-B., Cox,D.R. and Myers,R.M.
quence Spanning a Portion of the EPM1/APECED
osome 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g of 3599
f unknown
g of 5954
f unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94304, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 855
                                                                                                                                               Center))
```

```
Сþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
     밁
Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                          HSAC12
AC000012;
g1574906
08-OCT-1996 (Rel. 4
25-JUL-1997 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93847 ggcctggtgtggttgatgcctataatcccagcactttgggaggccgaggtgagctca 93906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1286
                                                                                                                                                                                                                Submitted (01-OCT-1996) to the EMBL/GenBank/DDBJ databases. Stanford Human Genome Center, 855 California Ave., Palo Ali
                                                                                                                                                                                                                                                                                 Quackenbush J., Fan J.B., Cox D.R., My "Contiguous Genomic Sequence Spanning Region of Human Chromosome 21";
                                                                                                                                                                                                                                                                                                                                      Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                           *** SEQUENCING IN BAC clone B173L3;
                                                                                                                                                                                                          94304, USA
                                                                                                                                                                                                                                            Quackenbush J., Fan J.B., Cox D.R., Myers R.M., Vollrath
                                                                                                                                                                                                                                                                         Unpublished.
                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (human)
                                                                                                                                                                                                                                                                                                             -100000
                                                                                                                                                                                                                                                        -100000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aaa--ttagccaggcatggtggtgcacgcctctagtaccagctacttgggaggctgagat 94022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCCGGGCCTGGCAGTTCATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACCTA 1287
                                                                                                                                                                                                                                                                                                                                                                HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCCATGGTGGTGCCACTGC 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGGC 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219;
                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                       49, Created)
52, Last updated, Version 2)
5ROGRESS *** EPML/APECED region of PROGRESS 1, 13 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                DNA; HTG; 100000
                                                                                                                                                                                                                                                                                                  Cox D.R., Myers R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 125; DB 45;
Pred. No. 4.87e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                          Portion
                                                                                                                                                                                                                                                                                                                                                                                   region of chromosome 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 100000;
                                                                                                                                                                                                                                                                                           о́т,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 6;
                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                          EPM1/APECED
                                                                                                                                                                                                                                             .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

```
RESULT
ID HS
AC ZS
NI e.
    င္
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Сb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93907
with foreign sequence from E.coli, yeast, vector, order of segments is not known; 800 n's separate Unfinished sequence: dJ339A18 Contig_ID: 01495 Unfinished sequence: dJ339A18 Contig_ID: 01275 Unfinished sequence: dJ339A18 Contig_ID: 01198 Unfinished sequence: dJ339A18 Contig_ID: 01197 Unfinished sequence: dJ339A18 Contig_ID: 01258 Unfinished sequence: dJ339A18 Contig_ID: 01052
                                                                                                                                                                                                                                                                                                                                      HS339A18
Z97054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length * of 11550
                                                                                                                                                                                                                                                                                                                                                                                              1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1346
                                                                                                   sequence may
                                                                                                               the
                                                                                                                                                                  Wellcome Trust Genome Campus, Hinxton, Camb
UK. E-mail enquires: humquery@sanger.ac.uk
                                                                                         contaminated
                                                                                                                                                                                           Submitted
                                                                                                                                                                                                                                                                                         20-JUN-1997 (Rel. 52, 0
20-JUN-1997 (Rel. 52, 1
Human DNA sequence ***
                                                                                                                                    represent the correct sequence.
                                                                                                                                              clonerequest@sanger.ac.uk
IMPORTANT: This sequence is unfinished
                                                                                                                                                                                                              Vaudin
                                                                                                                                                                                                                                                          Homo sapiens
Eukaryotae; π
                                                                                                                                                                                                                                                                                                   20-JUN-1997
20-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 100000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100000:
                                                                                                               release
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggcctggtgtggtggctcatgcctataatcccagcactttgggaggccgaggtgagctca
                                                                                                                                                                                                                                                                                HTGS_PHASE1
                                                                                                                                                                                                                                                                                                                                                                                                      999a99atcacctgagc-cccaaaggtggaggttgcagtgagttgagatcaccccactgc 94081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aaa--ttagccaggcatggtggtgcacgcctctagtaccagctacttgggaggctgagat 94022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaagtttgagaccagcctgggcaacatggtgaaaccccgtctctat-aaa-aaaatacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCCGGGCCTGGCAGTTCATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACCTA 1287
                                                                                                                                                                                                                                                                                                                                                                                           AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCCATGGTGGTGCCACTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGGC
                                                                                                                                                                                                                3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67458
bp in
                                                                                                                                                                             (06-NOV-1996) to the Trust Genome Campus, H
                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                    s (human)
mitochondrial eukaryotes; Metazoa; Chordata;
Eutheria; Primates; Catarrhini; Hominidae; H
                                                                                                               of this
                                                                                                   change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69665: gap of unknown length * 81216 83423: of 16577 bp in length. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               using a ta
BP; 16988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (vector-purs (J.-B. Fan, Stanford Human Genome using a transposon-mediated approach." Bp; 16988 A; 18331 C; 19442 G; 18704 T; 26535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/clone="B173L3"
/clone_lib="Caltech/Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Sequence data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ibrary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.88;
77.48;
                                                                                                   as
                                                                                                              data
                                                                                                                                                                                                                                                                                                                                                DNA;
                                                                                                                                                                                                                                                                                         , Created)
, Last updated,
** SEQUENCING IN
                                                                                                  ta is
work
                                                                                                                                                                                                                                                                                                                                                HTG;
                                                                                                   continues.
                                                                                                              based
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 125; DB 5;
Pred. No. 4.87e-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                145194
                                                                                                                                                                                         EMBL/GenBank/DDBJ
                                                                                                                                    Work
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                               0
B
                                                                                                                                                                                                                                                                                          Ä
                                                                                          n the .
The s
                                                                                                                                                                                                                                                                                                     Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                   8
                                                                                                                                                                                                                                                                                         PROGRESS ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collected from 3kb
                                                                                                                                   d and don the
                                                                                                                                                                              nBank/DDBJ databases.
Cambridgeshire, CB10
                                                                                                             understanding
                                                                              vector,
                                                                                                                                              does
                                                                                                   sequence
                                                                                                                                                                    Clone
                                                                                                                                   sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              * 69666
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetics Whole-Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 100000;
                                                                                                                                              not
            Length:
Length:
Length:
Length:
Length:
                                                                 segments.
                                                                                                                                                                   requests:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human Genome
ach."
                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81215:
length
                                                                                                   may
                                                                                                                                              necessarily
                                                                                                                                   ż
                                                                                                  that
y be
                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                          clone 339A18
                                                                           etc.
                                                                                                                                    'n
   13468
1181 k
1123 k
6108 k
1692 k
2161 k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
* 83424
                                                                                                                                   progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                              1SA,
 8 bp
5 bp
6 dq
2 bp
2 bp
1 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ú
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                             င္မ
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                 HID
                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Ma
Best Loc
Matches
                                                                                                               AUTHORS
TITLE
                                                                                                  JOURNAL
                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                               40790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unfinished
Unfinished
Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            taaaaaataaaaaagttagccaggtgtggtagcgtgcacctgtagttccagctacttggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agttgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aggctgaggtgggaggattgcttgagc-ccaggtgacggagtttgcagtgagccatgatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --AAAAACAAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA
                                                                                                                                                                                                                                                                                                                                                                                              TGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCCATGGTG
                                        Direct Submission
Submitted (06-NOV-1996) Wellcome Trust Genome Campus, Hinxton,
Cambridgeshire, CB10 ISA, UK. E-mail enquires:
humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk
IMPORTANT: This sequence is unfinished and does not necessarily
                                                                                                                                                                                                                                                                                            Human DNA sec
339A18; HTGS
                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                HS339A18
                                                                                                                               Vaudin,M
                                                                                                                                                                OMOH
                                                                                                                                                                                Vertebrata;
                                                                                                                                                                                               Eukaryotae;
                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145194
                                                                                                                                                 (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence
   release
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                             40795
                                                                                                                                                                                                                                                HTGS_PHASE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.8%;
larity 79.3%;
Conservative
                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo /clone="339A18" /chromosome="X" / BP; 35039 A; 294
                                                                                                                                                                                                                                                                                            requence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1..145194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                               145194 bp
   ę,
                                                                                                                                              6
                                                                                                                                                                            mitochondrial
Mammalia; Eutl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d7339A18
   this
                                                                                                                                                145194)
   data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 124; DB 5;
Pred. No. 2.60e-64;
0; Mismatches 47
                                   sequence.
                                                                                                                                                                                Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29424 C;
                                                                                                                                                                                                                                                                                                             DNA
SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
Contig_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contig_ID:
Contig_ID:
   ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens"
                                                                                                                                                                              eukaryotes; Metazoa; Chordata;
heria; Primates; Catarrhini; Ho
   based
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28997
   8
                                                                                                                                                                                                                                                                                                               Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01439
00784
00051
000591
00397
00464
01041
000834
010635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01494
00286
00001
00109
00484
01239
00606
00901
   the
                                 9
                                                                                                                                                                                                                                                                                                               PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ი</u>
                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 145194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33165 T;
understanding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                sequence
                                                                                                                                                                                                                                                                                                                 * * *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       868 bp
1048 bp
2530 bp
2883 bp
3632 bp
11527 bp
7531 bp
6928 bp
15877 bp
                                                                                                                                                                                                                                                                                                             20-JUN-1997
from clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4:
                                 S
                                                                                                                                                                              Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            other;
                                 'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                              progress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
```

```
BASE COUNT
ORIGIN
                                                            DEFINITION
ACCESSION
                                                                                                                            RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40551 tgaacccagcagttcgagaccagcctgggaaacatggcaaaaccccatctctacaaaaaa 40610
                                                                                                                                                                                                                                                                                                                           40790 agttgc 40795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40611 taaaaaataaaaaagttagccaggtgtgggtagcgtgcacctgtagttccagctacttggg 40670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1177
                                                                                                                                                                                                                                                              1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with forery...
of segments is not kn
sequence: dJ339A18
sequence: dJ339A18
sequence: dJ339A18
                                                                                                                                                                                                                                                                                                                                                                                                                         aggctgaggtgggaggattgcttgagc-ccaggtgacggagtttgcagtgagccatgatc 40729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --AAAAACAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA 1235
                                                                                                                                                                                                                                                           TGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACTGAGGCAGGAGCATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTG 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence: dJ339A18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence: dJ339A18
sequence: dJ339A18
sequence: dJ339A18
sequence: dJ339A18
sequence: dJ339A18
sequence: dJ339A18
Human BAC
AC000118
g1809227
HTG.
                                                                                                                            HSAC000118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *** WARNING:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence is unfinished. When sequencing is complete, the sequence data presented in this record will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        þ
                                                                                                                                                                                                                                                           1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.8%;
llarity 79.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence data presented in this record will be replaced single finished sequence with the same accession number. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρι
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dJ339A18
dJ339A18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/clone="339A18"
                                                                                          8 96625 bp DNA clone RG072Ell from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29424 c 28997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .145194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Phase 1 High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       change as work continues. The sequence may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence from E.coli, yeast, vector, phage etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      t known; 800 n's sepect of the contig_ID: 01495
8 Contig_ID: 011975
8 Contig_ID: 01197
8 Contig_ID: 01197
8 Contig_ID: 01052
8 Contig_ID: 010494
3 Contig_ID: 00001
3 Contig_ID: 00001
4 Contig_ID: 00001
5 Contig_ID: 00006
6 Contig_ID: 00006
7 Contig_ID: 00001
8 Contig_ID: 00001
9 Contig_ID: 00001
1 Contig_ID: 00001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 124; DB 128;
Pred. No. 2.60e-64;
0; Mismatches 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Throughput Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33165 t 18569 others
                                                                                          7q21-7q22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 1181 bp Unfinished Length: 6108 bp Unfinished Length: 1692 bp Unfinished Length: 2161 bp Unfinished Length: 3769 bp Unfinished Length: 868 bp Unfinished Length: 1048 bp Unfinished Length: 2530 bp Unfinished Length: 2530 bp Unfinished Length: 3632 bp Unfinished Length: 11527 bp Unfinished Length: 7102 bp Unfinished Length: 7531 bp Unfinished Length: 6928 bp Unfinished Length: 15570 bp Unfinished Length: 1570 bp Unfinished Length: 1570 bp Unfinished Length: 1570 bp Unfinished Length: 1570 bp Unfinished Length: 14465 bp Unfinished Length: 1465 bp Unfinished Length: 1885 bp Unfinished Length: 1885 bp Unfinished Length: 1885 bp Unfinished Length: 1885 bp Unfinished Length: 1591 bp Unfinished Length: 1591 bp Unfinished Length: 1591 bp Unfinished Length: 1595 bp Unfinished Length: 1597 bp Unf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                          complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 145194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          segments. Unfinished th: 13468 bp Unfinished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7100
                                                                                                                            31-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           þe
                                                                                                                                                                                                                                                                                                                                                                                          1058
```

ç 밁 င္မ В ç g

ဌ

similarity to

Human

YAC U35072 (NID:g1016713)"

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
misc_feature
                                                                                                 misc_feature
                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence was finished as follows unless otherwise noted: all regions were double stranded or sequenced with an alternate chemistry; an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; H 1 (bases 1 to 96625)

Minx.P. Graves, T and Biewald, T.
The sequence of H. sapiens BAC clone RG072E11
Unpublished (1997)
2 (bases 1 to 96625)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEIGHBORING SEQUENCE INFORMATION:
The clone sequenced to the left is H_RG161K23, 200
Actual start of this clone is at base position 1296
H_RG161K23; actual end is at 96625 of H_RG072E11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone is from the first release of the human BAC library. The library contains cloned DNA from a human male fibroblast cell line 978SK. For references see: Shizuya et al., Proc. Natl. Acad. Sci. 89:8794-8797 (1992); Kim et al., Genomics 34:213-218 (1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOTICE: This sequence may not represent the entire insert of this clone. It may be shorter because we only sequence overlapping sections once, or longer because we provide a small overlap between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (31-JAN-1997)
Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This clone contains the STS sWSS1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Selection:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           confirmed by restriction digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          neighboring submissions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Waterston,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Genetics, Washington St. Louis, MO 63108, USA http://genome.wustl.edu/gsce-mail: sapiens@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PBELO
                                                                                                                                                                                                                                                                                                                                                                                                                       /map="70
                                     complement(1836..2027)
                                                                                                                                                                                                                              (NID:g121
1026..109
                                                                                                                                                                                                                                                                                                                                                       (NID:g116491)"
936..1031
/rpt_family-"ALU"
2209..2268
                                                                                                                                                                 (NID:g140331)"
1109..1159
                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="RG072E11"
/clone_1ib="CITB-978SK-B"
/map="7921-7922"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/chromosome="7"
                                                                                                                   /note="76% similarity
(NID:g1149521)"
                                                                                                                                                                                                                                                                                                            /note="73% similarity
(NID:g642458)"
                                                                                                                                                                                                                                                                                                                                                                                               /note="69% similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                            (NID: g1322150
                                                                            note="74% similarity"
                                                                                                                                                                                                        'note="73% similarity
                                                                                                                                                                                                                                                                   note="68% similarity"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chloramphenicol
                                                                                                                                                                                                                                                   3360)"
                                                                              ដ
                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                    ç
                                                                                                                                                                                                          б
                                                                                                                                                                                                                                                                       6
                                                                                                                                           Human
                                                                                                                                                                                                          Human
                                                                                                                                                                                                                                                                     Human
                                                                                                                                                                                                                                                                                                                                    Human
                                                                                                                                                                                                                                                                                                                                                                                            Human cosmid Z68873
                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                University
                                                                              cosmid
                                                                                                                                                                                                          cosmid
                                                                                                                                                                                                                                                                                                                                    cosmid U15422
                                                                                                                                             cosmid
                                                                                                                                                                                                                                                                       cosmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200 bp
129619
                                                                                                                                                                                                                                                                       Z49862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       overlap.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
```

```
misc_feature
                                misc_feature
                                                                         misc_feature
                                                                                                     repeat_region
                                                                                                                                      misc_feature
                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                     repeat_region
                          /note="77% similarity t
(NID:g1430780)"
26793.26835
                                                                                                                                                                 complement(23222..23515)
/rpt_family="ALU"
24106..24377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="match to Human cosmid
complement(14427..14695)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                             complement(20198..20908)
                                                                                                                                                                                                                                                                                                                                                                                                             complement(19511..19803)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(19222..19503)
/rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(17949..18216)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(17612..17661)
/rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(13847..14152)
/rpt_family="ALU"
14160..14179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="ALU"
complement(10816..10849)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="80% similarity complement(8403..8695)
   /note="80% similarity to
26808..26902
                                                                                                                                      /rpt_family="ALU"
24597..24952
                                                                                                                                                                                                              /note="82% similarity to (NID:g1256772)"
                                                                                                                                                                                                                                          /note="75% similarity
(NID:g1147582)"
22483..22584
                                                                                                                                                                                                                                                                                                                     /note="87% similarity to
(NID:g1237039)"
22180..22445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(13607..13638)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="match to Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NID: 9514262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12410..12465
/note="78% similarity to
(NID:g1552538)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="81% similarity
NID:91430781)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rpt_family-"ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note-"72% similarity
NID:g1322398)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="100% similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="76% similarity to Human ABL gene U07561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        t_family="ALU"
3..7243
                                                                                                                                                                                                                                                                                       _family="MER"
3..22548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="ALU
                                                                                       family-"THE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _family="L1"
                                                                                                          ..26640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                           ö
                                                                                                                      EST M78483 (NID:g9272799)"
                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to Human cosmid 275890
               Human EST T51746 (NID: g653603)"
                                                           Human cosmid Z75889
                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                         Human
                                                                                                                                                                                                                                                                                                                                                    Human cosmid Z70280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human cosmid U70984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human cosmid 273418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human EST H48092 (NID:g924144)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z54073 (NID:g974829)"
                                                                                                                                                                                                                              cosmid U51281
                                                                                                                                                                                                                                                                         cosmid Z68331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST H71176 (NID:g1042992)"
```

ĵ

```
ဌ
                             밁
                                                          Сb
                                                                                          밁
                                                                                                                       СЪ
                                                                                                                                                       밁
                                                                                                                                                                                   Ç
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                        Note: remainder of annotations omitted
                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                   90537
                                                                                           90657
                                                                                                                                                       90597
                                                                                                                                                                                 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                aaaacttagcctggagtggtggcacatgcctgtagtcccagctatttgggaggctgaggc 90656
AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCCATGGTGGTGCCACTGC
                                                                             acgagaatctcttgaac-ccaggaggcagaggctgcagtgagccaagatcatgccgttgc 90715
                                                                                                                         AAAAAGTTAGTCAGGTGGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGGC 1168
                                                                                                                                                                                                                                                   180;
                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                              8.6%;
ilarity 78.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                         /rpt_family="L1" 38047..3830
                                                                                                                                                                                                                                                                                                                                                                                        /rpt_family="L1" 37917..38010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(35928..36215)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(34518..34755)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(33220..33509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="70% similarity to Human
complement(31607..31884)
/rpt_family="ALU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (28966..29167)
/note="75 % similarity to Human complement (29601..29652)
/note="94% similarity to Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="66082 (NID:g1519282)"
27108..27701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="80% similarity to Human
yene U07000 (NID:g487344)"
33083..33205
                                                                                                                                                                                                                                                                                                                                            rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (NID:g1147582)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="83% similarity to Human cosmid Z73495
(NID:g1332499)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rpt_family="ALU"
18087..28115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="75% similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NID: 91322150)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="similar to Human clones
066083 (NID:g1519284)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3083..33205
note="78% similarity to Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="83% similarity to Human cosmid Z73495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="89% similarity to Human PAC Z76735 (NID:g1438501)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="76% similarity to Human cosmid 273359
NTD:a1322150)"
                                                                                                                                                                                                                                                                                                                                                                                                                                        _fami]
                                                                                                                                                                                                                                                                                                                                                                                                                                      y="ALU"
                                                                                                                                                                                                                                              Score 121; DB 89; 1
Pred. No. 3.90e-62;
0; Mismatches 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST H85739 (NID:g1067318)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cosmid Z68331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       breakpoint cluster region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST W93033 (NID:g1422184)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U66082 (NID:g1519282) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST T34443 (NID:g616541)"
                                                                                                                                                                                                                                                                             Length 96625;
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H09211 (NID:g874033)"
                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                Gaps
                                                             1108
```

Search completed: Wed Mar 25 13:28:43 1998 Job time: 1987 secs.

THIS PAGE BLANK (USPTO)

```
Description:
Perfect Score:
N.A. Sequence:
Comp:
                                                                                   Result
No.
                                                                                                                                                                                                                                                                                                                                                 Statistics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MPsrch_nn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nmatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 lar output not generated
     2
                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STD :
  1415
300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               n.a.
                                                                                   Query
Match
  100.0
                                                                                                                                                                                                                                                                                                                                                                                           1:STS1 2:STS2 3:STS3 4:STS4 5:STS5 6:STS6 7:STS7 8:STS8 9:STS9 10:STS010 11:STS11 12:STS12 13:STS13 14:gnEST1 15:gnEST2 16:gnEST2 17:gnEST4 18:gnEST5 19:gnEST5 11:STS11 15:gnEST5 19:gnEST5 19:gnEST5 12:gnEST1 12:gnEST6 22:gnEST9 23:gnEST10 24:gnEST11 25:gnEST1 21:gnEST13 27:gnEST14 28:gnEST15 29:gnEST16 30:gnEST17 31:gnEST13 27:gnEST14 28:gnEST15 29:gnEST16 30:gnEST17 31:gnEST13 37:gnEST14 28:gnEST25 34:gnEST26 40:gnEST27 41:gnEST28 42:gnEST29 43:gnEST29 39:gnEST26 40:gnEST27 41:gnEST28 42:gnEST29 43:gnEST30 44:gnEST31 45:gnEST2 46:enEST1 47:enEST2 48:enEST3 49:enEST3 50:enEST15 51:enEST15 51:enEST17 53:enEST8 54:enEST19 55:enEST10 56:enEST11 57:enEST12 58:enEST13 59:enEST14 60:enEST15 61:enEST216 62:enEST17 63:enEST28 64:enEST29 75:enEST29 76:enEST21 77:enEST27 78:enEST29 74:enEST29 75:enEST25 71:enEST21 77:enEST3 78:enEST33 79:enEST34 80:enEST34 81:enEST35 81:enEST34 87:enEST37 83:enEST38 84:enEST34 80:enEST35 81:enEST36 82:enEST37 83:enEST38 84:enEST39 85:enEST45 81:enEST36 82:enEST37 83:enEST38 84:enEST39 85:enEST36 81:enEST36 82:enEST37 83:enEST38 84:enEST39 85:enEST36 81:enEST36 82:enEST37 83:enEST38 84:enEST39 85:enEST45 81:enEST36 82:enEST37 83:enEST38 84:enEST39 85:enEST45 81:enEST36 82:enEST47 83:enEST38 84:enEST39 85:enEST45 81:enEST36 82:enEST47 83:enEST38 84:enEST39 85:enEST46 81:enEST46 82:enEST47 83:enEST48 84:enEST39 85:enEST46 82:enEST47 83:enEST48 84:enEST39 85:enEST46 82:enEST47 83:enEST48 84:enST5

    n.a. database search, using Smith-Waterman algorithm

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum Match 0%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dbase 0; Query 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TABLE default 
Gap 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        >US-08-236-918A-7
(1-1415) from 5674704.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wed Mar 25 13:54:43 1998;
                                                                                                                                                                                                                                                                                                                                              Mean 12.191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333433 seqs, 126143548 bases
                                                                                   Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1415
515
     ထ ဖ
                                                                                                                                                                                                                                                                                                                                              Variance 5.851;
  G28572
G26790
                                                                                     Ħ
                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MasPar time 384.28 Seconds 928.964 Million cell updates/sec
                                                                 Description
human STS SHGC-35316.
human STS STS_U03397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ×
                                                                                                                                                                                                                                                                                                                                              scale 2.084
0.00e+00
1.78e-222
                                                                                   Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (MT)
```

0.0	() (,						(3	()	()	()	()			()			()	()				(3	()			()	()				•) ()	()	()					
4 4 5 4	43	* > +	40	39	38	37	36	3 5	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	ω	12	3 C		00	7	6	5	4	ω	
104 104	104	104	104	104	104	104	104	104	104	105	105	105	105	105	106	106	106	107	107	108	107	107	108	108	108	108	108	108	108	108	109) h	111	114	114	115	115	115	115	
7.3														•																					•					
486 4 486 7	30 7	200	282	72 7	72 2	61 2	61 4	41 7	41 2	65 2	65 4	86	28 6	28 2	00	28 3	28 7	60 7	60 4	47 7	9 66	99 3	73 7	73 2	38	38 6	00 7	00 2	60 6	50	220	, 4	4.0	03 2	03 5	28 3	28 6	73 8	73 3	
ωω	φ	00	ο ο	9	œ	œ	9	9	œ	G	9	4	ω.	œ	σ	Ø	Н	N	ν,	σ	7	0	9	ω 1		œ	9	0	9	20	N a	١ (л ~	N	Ν	0	7	0	î AA	
AA528706 HS1320180	684	200	9843	683	8388	986	493	6831	831	6159	155	37	ο,	9	S	5733	093	1669	5018	2764	830	7199	6827	827	0845	884	6253	2532	984	55	1267) + 1 +	2/30	236	868	8846	852	7077	077	
nf51e11.s	.,	עני	. s).s	o.s	S.	S.S	S.	S.	7.r	7. r	STS	S.	2.5	STS	S	S.	2	2	S	S		H		S	s				ָר מ				.,	[.r	:	:).s	s	
1 NCI_CGAP_A 1 NCI_CGAP_A													1 NCI_CGAP_P																		1 NCI CGAP_N		NCI_CGAL	NCI_CGAE	NCI_CGAE	NCI_CGAF	NCI_CGAE	NCI_CGAE	NCI_CGAF	
2.59e-56 2.59e-56	2.59e-5	2.096-0	2.59e-5	4.07e-5	4.07e-5	4.07e-5	4.07e-5	4.07e-5	6.38e-5	6.38e-5	6.38e-5	9.98e-5	9.98e-5	1.56e-5	9.98e-5	9.98e-5	1.56e-5	1 560-5	2.420-6	0.040	.846-6	.15e-6	.15e-6	.32e-6	.32e-6	.32e-6	.32e-6													

ALIGNMENTS

0000

00000

a

იი

o o

o o

		AUTHORS JOURNAL COMMENT	REFERENCE	NID KEYWORDS SOURCE ORGANISM	RESULT 1 LOCUS DEFINITION ACCESSION
Primer A: TGAAATGGAAGTCAATAGGGC Primer B: AAAAAAGTGGTGCATTTTTAAAGG STS size: 180 PCR Profile:	Contact: Richard M. Myers Stanford Human Genome Center (SHGC) Stanford University School of Medicine Department of Genetics, M-344, Stanford, CA 94305, USA Tel: 4157259687 Fax: 4157259689 Email: myers@shgc.stanford.edu	Myers,R.M. Unpublished (1996)	Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1415)	g1408387 Simple sequence; primer; sequence tagged site. human. Homo sapiens	G28572 1415 bp DNA · STS 01-JUL-1996 human STS SHGC-35316. G28572

```
STS
primer_bind
primer_bind
primer_bind
BASE COUNT
31
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 100.0%; Score 1415; DB 9; Length 141 Best Local Similarity 100.0%; Pred. No. 0.00e+00; Matches 1415; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                         481
                                                481
                                                                        421
                                                                                              421
                                                                                                                       361
                                                                                                                                              361
                                                                                                                                                                     301
                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                             181 CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA 240
                                                                                                                                                                                                                                                                            181 caagatcattgcaggatccttgtagtaactgcccagctggtacattctgtgataataaca 240
                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                           \vdash
                                                                    ttgattaaaattctctttggaatcagctttgctagtatcatacctgtgccagatttcatca 120
                                                                                                                                                                                                                                                                                                                                                                                                        agtggaaagttctccggcagccctgagatctcaagagtgacatttgtgagaccagctaat 60
                       ggaatcagatttgcagtccctgtcctccaaatagtttctcccagcgcgcaggtggacaaagga 300
tggatggaaagtctgtgcttgtgaatgggacgaaggaggagggacgtggtctgtggaccat 600
                                                                                                                                                                  GGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Prepared with primer pairs provided by Sandoz, derived from U03397 -- Washington University/Merck EST sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Buffer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protocol:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  385 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Template:
Primer:
dNTPs:
Taq Polymerase:
Total Vol:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MgCl2:
KCl:
Tris-HCl:
pH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Thermal Cycler:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Annealing:
Polymerization:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Denaturation:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Initial incubation: 94 degrees C for 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/map="1"
885..1064
885..905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(1041..1064)
332 c 333 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1..1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25 ng
each 1 uM
each 200 uM
: 0.05 units/ul
10 ul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
50
8.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           # # # #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94 degrees C 1
62 degrees C 1
72 degrees C 1
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perkin Elmer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for 15 for 23 for 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seconds
seconds
seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

Ş

밁 δõ 뮍 Ş 밁 Ş 밁 Ş В Qy 당

밁 QY 밁 δÃ B

LOCUS DEFINI ACCESS NID KEYWOR SOURCE ORGA REFERE AUTH	Qy 1 Qy 1		0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0y 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Qy Db	Дb	Qy Db Qy
ATTION SSION SSION SSION SSION SANISM	381	3	1141 1141 1201 1201	08	961 961 021	841 841 901 901	721 721 781 781	661 661	541 601
2 2 31-MAY-199 human STS STS_U03397. G26790 G26790 G1349022 STS sequence; primer; sequence tagged site. human STSs derived from sequences in dbEST and the Unigene collection. Homo sapiens Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 515) Hudson,T.	CAGACATGAACTGCCAGGCCCGGCCAAAATAATGCAC gaggacagagctggtgataaaaaaaaaaaaaaaa 14 	tacaggctggtctcaaactcctaggttcactttggcctcccaaagtgctgggatt	acctotgggagctcaagtgatcotcotgcotcagtcotcotagtagctggaactacaagga 1	teteactetgteacceaggetggagtgeagtggeaccaccatggetetetgeageettg 	tttcaaaagcaagaacaccatcctacataatacccaggattcccccaacacacgttcttt 1	gtagctgccgatttccagaagaagaagaaggaggatgtgaactgtgaaatggaagtcaat 9	tectgetgttettecteaegetecgtttetetgttgttaaaeggggeagaaaagaaa	aggacactotocgcagatoatotocttotttottgcgctgacgtcgactgcgttgctot 	
. 96	1380		1200	14	1020 1020 1080	960	780 780 840	NN	560

ij

```
Qy
                                                                                                                                                         Q
                                                                                                                                                                                    밁
                                                                                                                                                                                                             Ω
Ş
                           밁
                                                 QΥ
                                                                              밁
                                                                                                                                   밁
                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                       primer_bind
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
  1185
                                                     1125
                                                                                                          1065
                                                                                                                                                             1005
                                                                                                                                                                                                                                                                                                                                                                                                                primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                              STS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                           301
                                                                                 241
                                                                                                                                   181
                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                945 CATCCGCTATCACAGCTTTCAAAAGCAAGAACACCATCCTACATAATACCCAGGATTCCC
                                                                                                                                                                                                                                                                                                                      y Match 21.2%;
Local Similarity 58.3%;
hes 300; Conservative
                                                                                                                                                                                                                               61 catccgctatcacagctttcaaaagcaagaacaccatcctacataatacccaggattccc 120
                                                                                                                                                                           ccaacacacgttctttctaaatgccaatgagttggcctttaaaaatgcaccactttttt 180
                                                                                                                                                             CCAACACACGTTCTTTTCTAAATGCCAATGAGTTGGCCTTTAAAAAATGCACCACTTTTTT 1064
             GCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCTAGTA
                                                                              TTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCACCATG 1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 Cambridge Center, Cambridge MA 02142 USA
Tel: 617 252 1900
Fax: 617 252 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Derived from dbEST (genbank accession U03397).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STS size: 18
PCR Profile:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Primer A: TGAAATGGAAGTCAATAGGGC Primer B: AAAAAAGTGGTGCATTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protocol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: thudson@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Whitehead Institute/MIT Center for Genome Research Whitehead Institute for Biomedical Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Thomas Hudson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Whitehead Institute/MIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dNTPs: each 5 pM
dNTPs: each 4 nM
Tag Polymerase: 0.025 u
Total Vol: 20 ul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tris-HCL: 10 mM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Template: 10 ng
Primer: each 5 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MgCl2: 1.5 mM
                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Annealing: 56 de Polymerization: PCR Cycles: 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thermal Cycler:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Denaturation:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Presoak:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STSS
                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.3
                                                                                                                                                                                                                                                                                                                                                                                      complement(157..180)
62 c 55 g
                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/map="24.8 cR from top o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAAGTGGTGCATTTTAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            degrees
                                                                                                                                                                                                                                                                                                                      Score 300; DB 8; Le
Pred. No. 1.78e-222;
0; Mismatches 215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                          of Chrl linkage group"
                                                                                                                                                                                                                                                                                                                                                                                         rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome
                                                                                                                                                                                                                                                                                                                                               Length 515
                                                                                                                                                                                                                                                                                                                                                                                         215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Research; Physically
                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                         others
                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                      Gaps
                                                     . 1184
                                                                                                                                                                                                                1004
                             360
                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                      0
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                         밁
                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                             Query Match
Best Local :
                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  y Match 8.1%;
Local Similarity 78.7%;
2 tttttttttttttgagacagggtctcactctgttacctaggctggggtgcagtgggaca 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAACAGAACAGACAGATGAGGACAGAGCTGGTGAT 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAAAGTGCTGGGATTACAGACATGAACTGCCAGGCCCGGCCCAAAATAATGCACCACTTT 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTTGGCCTC 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA Library Arrayed by: Greg Lennon, Ph.D.

DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 1322 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA470779 373 bp mRNA EST 26-JUN-1997 ne19e10.s1 NCI_CGAP_CO3 Homo sapiens cDNA clone 881706 similar to contains Alu repetitive element; contains element LTR10 repetitive
                                                            185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M.D., Ph.D.

cDNA Library Preparation: M. Bento Soares,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        element ;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph. Tel: (301) 496-1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryotae; mitochondi
Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g2198088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tissue Procurement: Elias Campo, M.D., Michael R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCI-CGAP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 373)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer: -41m13 fwd. ET from Amersham
h quality sequence stop: 359.
                                                                                                                                                       90
                                                            Conservative
                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                       /note="Vector: pT/T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNI was prepared from 12 pooled bulk tumor samples and primed with a Not I - oligo(dT) primer. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and Cloned into the Not I and Eco RI sites of the modified pT/T3 vector. Library went through one round of normalization."
                                                                                                                                                                     /tissue_type="colon"
/lab_host="DH10B"
<1...>373
                                                                                                                                                                                                                                            /clone="881706"
/clone_lib="NCI_CGAP_Co3"
                                                                                                                                                                                                                             /sex="pooled"
                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                         89
                                                                                                                                                       ი
                                                                             Score 115; DB 31; Pred. No. 3.32e-65;
                                                            0;
                                                                                                                                                       88
                                                            Mismatches
                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cancer Genome
                                                                                                                                                       106
                                                                                                                                                       t
                                                            46;
                                                                                               Length 373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ph.D.
                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Emmert-Buck,
                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hominidae;
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ьe
```

```
RESULT
ID H
QY
                         밁
                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                             Query Match
Best Local :
                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSAA70779
AA470779;
g2198088
  1059
                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert Strausbergenih.gov Tissue Procurement: Elias Campo, M.D., Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: M. Bento Soares, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCT-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1059
                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (human)
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       element ;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JUN-1997 (Rel. 52, Creat
28-JUN-1997 (Rel. 52, Last
ne19e10.sl NCI_CGAP_Co3 Hom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1119
                                                                                                                                                                                                                                                                                                                                         www-blo.llnl.gow/bbrp/image/image.html Insert Length: 1322 Std
Error: 0.00 Seq primer: -41ml3 fwd. ET from Amersham High quality
sequence stop: 359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contains Alu repetitive element; contains element LTR10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCI-CGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                         N
              tttttttttttttgagacagggtctcactctgttacctaggctggggtgcagtggcaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccagtaggtgggactacagaagagcaccaccacaccccagctga-ttttttatttttctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atcatggttcactgcagccttgaattcctgg-gctcaagtgatcttcctgcctcagcctt 120
 TITTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ttg-taaagacagagtcttgctatgttgatcaggcttattttgaactcctgggtt 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCCAGGCTGGAGTGCAGTGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT-
                                                  185;
                                                               Similarity
                                                                                                   373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Index";
                                                                                                   ₽P;
                                                 Conservative
                                                                                                                                                                                             90
90
                                                                                                                                                                                        pT7T3 vector. Library went normalization."
                                                                                                                                                /clone="881706"
/clone_lib="NCI_CGAP_Co3"
/sex="pooled"
                                                                                                                         /tissue_type="colon"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                            8.1%;
                                                                                                   ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                   89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ast updated, Version 3)
Homo sapiens cDNA clone 881706 similar
                                                                                                  Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST;
                                               Pred.
0; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cancer Genome
                                                             Score 115; DB 80; Pred. No. 3.32e-65;
                                                                                                   88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            373
                                                                                                  G; 106
                                                 Mismatches
                                                                                                T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anatomy Project
                                                 46;
                                                                         Length
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similar to repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CGAP)
                                                 4.
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1118
                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1237
                                                 4
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                               Query Match
Best Local Similarity
Matches 187; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Onpublished.

Contact: Robert Strausberg, Ph.D. Tel: (301) *** Contact: Robert_Strausbergenih.gov Tissue Procurement: Louis M. Sta Robert_Strausbergenih.gov Tissue Procurement: Louis M. Sta Robert_Strausbergenih.gov Tissue Procurement: Louis M. Conna M.D., Ph.D., David Allman, Ph.D., M. Fatima Bonaldo, Ph. Preparation: M. Bento Soares, Ph.D., M. Fatima Bonaldo, Ph. Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone dist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA488846;
g2218448
                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.
Homo sapiens (human)
Eukaryotae; mitochondrial eukaryotes; Meta
..... Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1178
                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUL-1997 (Rel. 52, Created)
01-JUL-1997 (Rel. 52, Last updated, Version
aa55b01.s1 NCI_CGAP_GCB1 Homo sapiens cDNA of the control of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      www-bio.llnl.gov/bbrp/image/image.html Seq
from Amersham High quality sequence stop: 4
Key Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HS1285256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCI-CGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      National
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .-428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                     N
tttttttttttttttgagatggggtctcactcttgtcacccagactggagtgcagtgg 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttg-taaagacagagtcttgctatgttgatcaggcttattttgaactcctgggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cccagtaggtgggactacagaagagcaccaccacacccagctga-tttttatttttctt 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene
                                                                                                                                                             428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Index"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alu
                                                                                                                                                           B₽;
                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAP_GCB1 Homo sapiens repetitive element;.
                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(<1..>428)
109 A; 106 C; 91 G;
                                                                                                                                                                                                                                                                                                                                                               3']. Double-stranded cDNA was ligated to Eco RI adaptors Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library we
                                                                                                                                                                                                                                                     /clone="824809"
/clone
                                                                                                                                                                                                                                                                                               through one round of normalization, and Bento Soares and M. Fatima Bonaldo."
                                                                                                                                                                                                 /tissue_type="germinal center B
/lab_host="DH108"
                                                                                                                                                                                                                                                  /clone_lib="NCI_CGAP_GCB1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                       8.1%;
78.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST;
                                                             Score 115; DB 67;
Pred. No. 3.32e-65;
0; Mismatches 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                           122 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Metazoa; Chordat
tes; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٦
                                                                  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clone distribu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
rrhini; Hominidae;
                                                                                                          Length
                                                                                                                                                                                                                             cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      824809
                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -41m13 fwd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M. Staudt,
cDNA Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     distribution:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                       was
                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      similar
                                                                                                                                                                                                                                                                                                                       constructed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   띩
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                    ñ
```

•,

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                  ORIGIN
                                                                                               mRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CESSION
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tttttcagagacggggtttcaccatgttgcccaggctggtctcaaactcctgggctca 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cctgagtagctgggactacacgtatgtggccaccacaccgggcaaattattttgtatttc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aatcacagetcactgtggcttcggcttcctgg-gctcaagagatcctcccacctcagcct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTTTTTTTTTGACAGGGTCTCACTCT-GTCACCCAGGCTGGAGTGCAGTGGCAC 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aa55b01.s1 NCI_CGAP_GCB1 Homo sapiens cDNA
to contains Alu repetitive element;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue Procurement: Louis M. Staudt, M.D., Ph.D., Gerald Marti, M.D. CDNA Library Preparation: M. Bento Soares,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seq primer: -41m13 fwd. ET from Amersham High quality sequence stop: 418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g2218448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to contains
AA488846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome
Clone distribution: NCI-GGAP clone distribution
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA488846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          www-bio.llnl.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DILIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to
                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                      // CPURISH NUMBER OF THE PROPERTY OF THE PROPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ph.D.
                                                                                                                                                                                                                                                                constructed by Bento Soares /clone="824809"
                                                                                                                                                                                                                                                                                                                                3']. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not and Eco RI sites of the modified pT/T3 vector. Library went through one round of normalization, and was
                                                                                               complement(<1..>428)
106 c 91 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                 /tissue_type="germinal center B
/lab_host="DH10B"
                                                                                                                                                                                                                                 /clone_lib="NCI_CGAP_GCB1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428 bp
8.1%;
Score 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cancer Genome
                                                                                                  122
ВВ
                                                                                                  +
30;
                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Soares,
                                                                                                                                                                                                                                                                                                       M. Fatima Bonaldo."
                                                                                                                                                                                                        ce11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Anatomy
Length 428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T 25-JUN-1997 clone 824809 3' similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequencing information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              David Allman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fatima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA
```

```
SERFERE
SHIPTITE
CHIPTITE
SERFERE
SHIPTITE
SERFERE
SHIPTITE
SHIPTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE SOLUTION OF THE STATE OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
       Matches
                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA282360;
g1925276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-APR-1997 (Rel. 51, Created)
20-JUN-1997 (Rel. 52, Last updated, Version 3)
ztl2dll.rl NCI_CGAP_GCB1 Homo sapiens cDNA clone 712917 5' similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1236 GTTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCA 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert_Strausberg@nih.gov This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Seg primer: -28ml3 rev2 ET from Amersham High quality sequence stop: 483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HS1186885
                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tumor Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (human)
Eukaryotae; mitochon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to contains Alu repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /ertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttttttcagagacggggtttcaccatgtttgcccaggctggtctcaaactcctgggctca 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cctgagtagctgggactacacgtatgtggccaccacaccgggcaaattattttgtatttc 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aatcacagctcactgtggcttcggcttcctgg-gctcaagagatcctcccacctcagcct 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTTTTTTTTTTGACAGGGTCTCACTCT-GTCACCCAGGCTGGAGTGCAGTGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity 78.2%;
187; Conservative
          209;
                                                                                                                                               503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Index";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mitochondrial eukaryotes; Metazoa;
Eutheria; Primates; Catarrhini; Ho
       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bento
                                                                                                                                                                                                                                                                                                                                                                                                                                      Pharmacia), digested with Not 1 cand Eco RI sites of the modified
                                                                                                                                                                                                                                                                         through one round of normalization, and was constructed Bento Soares and M. Fatima Bonaldo."
/clone="712917"
/clone_lib="NCI_CGAP_GCB1"
                                                                                                                                                                                                        /tissue_type="germinal
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                   8.1%;
76.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Double-stranded cDNA was ligated to Eco RI adaptors rmacia), digested with Not I and cloned into the Not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RNA;
                                                                                                                                               114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           element; contains element
Score 114; I
Pred. No. 2.1
0; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                           Ç
                                                                                                                                           146
       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No. 3.32e-65;
                                                                                                                                        <u>ც</u>
                                                                                                                                           105
                                   DB 52;
2.15e-64;
                                                                                                                                                                                                                                                   center
                                                                                                                                        T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48;
                                                                                                                                                                                                                                                   W
                                                                    Length 503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PT7T3 vector.
       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PTR7 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
       ō,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
   رى
د.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        wen
                                                                                                                                                                                                                                                                                                                                                                                    ξģ
```

```
ľ
                                                                                                                                mRNA
BASE COUNT
                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ငှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ද
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EATURES
         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAGAGTGAGACCCTGTCAAAAAAAAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGCACTCCAGCCTGGGT 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGCAGGAGGATCACTTG 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                catggtggcacacacctttattctcagctactcaggtggctgaggtgggaggatcccttg 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgggcaagatggcgagaccccatctctac--aa-aaaaatttaaaaa-ttacctggg 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCA 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gttcacgcctgtaatcccagcactgtgggcggatcacttgagcccaggagtttgagacca 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA282360 503 bp mRNA EST 13-JUN-1997 zt12d11.rl NCI_CGAP_GCB1 Homo sapiens cDNA clone 712917 5' similar to contains Alu repetitive element; contains element PTR7 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: Robert_Strausberg@nih.gov
This clone is available royalty-free through LLNL ; contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCI-CGAP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g1925276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA282360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            element ;.
      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  numan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3E Consortium (info@image.llnl.gov) for primer: -28ml3 rev2 ET from Amersham n quality sequence stop: 483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 503)
                                                                                                                                   138
                                                                                                                                                                                                                                                                          /Organism="Homo sapiens"
//Organism="Homo sapiens"
//Organism=
/
                                                                                                                                                                      <u>۸</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                             /tissue_type="germinal center B cell"
/lab_host="DH10B"
                                                                                                                                                                                                                                                          /clone_lib="NCI_CGAP_GCB1"
         8.1%;
76.3%;
                                                                                                                                   .>503
114 (
                                                                                                                                   ဂ
         Score
Pred.
                                                                                                                                   146
                                                                                                                                g
         114; DB 22;
No. 2.15e-64;
                                                                                                                                   105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1060
                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 further
                                      503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA
```

÷

```
mRNA
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1332
                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agcagaacaagaccctgtctcaaaaaaaaaaaaaaa 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACAGAGTGAGACCCTGTCAAAAAAAAAAAAAAAA 1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGCAGGAGGATCACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acctgggcaagatggcgagaccccatctctac--aa-aaaaatttaaaaa-ttacctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGCACTCCAGCCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTCATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCA 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gttcacgcctgtaatcccagcactgtgggcggatcacttgagcccaggagtttgagacca 136
                                                                                                                                                                                                                                                                          Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    209;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
Eukaryotae; r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA482730 284 bp mRNA EST nf47g04.sl NCI_CGAP_Alv1 Homo sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                   CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome
Clone distribution: NCI-CGAP clone distribution
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      National Cancer Institute, Cancer Genome Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g2211575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA482730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contains Alu repetitive element; .
                                                                                                                                                                                                                                                                                          Insert Length: 379
                                                                                                                                                                                                                                                                                                                      www-bio.llnl.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                           Tissue Procurement: Lee Helman, M.D., Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                cDNA Library Preparation: David B. Krizman,
                                                                                                                                                                                                                                                                          primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to
                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          Robert_Strausberg@nih.gov
                                                              þ
                                                                                                                                                 /organism="Homo sapiens"
/note="Vector: pAMP10; mRNA made from alveolar rhabdomyosarcoma, cDNA made by oligo-dT priming Non-directionally cloned. Size-selected on agar average insert size 600 bp. Reference: Krizme (1996) Cancer Research 56:5380-5383."
                                                           /tissue_type="alveolar
/lab_host="DH10B"
<1..>284
71 c 72 g
                                                                                                                                                                                                                                                           r: -41m13 fwd. ET from Location/Qualifiers
                                                                                                                       /clone_lib="NCI_CGAP_Alv1"
                                                                                                                                        /clone="923094"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mitochondrial eukaryotes; Metazoa; Chordata; Mammalia; Eutheria; Primates; Catarrhini; Ho
 7
78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284)
 . 38;
 Score
Pred.
                                                                                                                                                                                                                                                                                        Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
111; DB 37;
No. 5.84e-62;
                                                             44
                                                                                                         rhabdomyosarcoma'
                                                                                                                                                                                                                                                                            Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59;
              Length 284;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                    on agarose
Krizman e
                                                                                                                                                                                                                                                                                                                                                    Sequencing (
information
                                                                                                                                                                                                                                                                                                                                                                                                                              Emmert-Buck,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    923094 similar
                                                                                                                                                                                                 priming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                    et
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1213
                                                                                                                                                                                                                                                                                                                                                  y Center
on can be
                                                                                                                                                                                                                                                                                                                                                                                                                            M.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ដ
```

```
ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       පි
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                맑
               밁
                                      fg
                                                                용
                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HS1274183
AA482730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1118
                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert Strausbergenih.gov Tissue Procurement: Lee Helman, M.D., M.D., Ph.D. cDNA Library Preparation: David Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: David B. Krizman, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html Insert Length: 379 Std Error: 0.00 Seq primer: -41m13 fwd. ET from Amersham.
                                         1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92211575
24-JUN-1997 (Rel. 52, Created)
10-JUL-1997 (Rel. 52, Last updated, Venf47904.sl_NCI_CGAP_Alv1 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1294
                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tumor Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contains Alu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "National
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCI-CGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37
               97
                                                                  37
                                                                                                         Local
gaccaaaaaaaaaattagctgggcatggtgaccacacacctgtagtcccagctactcag
                                                     tgaacccaggagttcgagaccagcctgggcaacatggcaaaatcccatctctacaaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -A--AAAACAAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaccaaaaaaaaaaaattagctgggcatggtgacacaccccgtagtccccagctactcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tgaacccaggagttcgagaccagcctgggcaacatggcaaaatcccatctctacaaaaaa
                                       TGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCATCTTTACCAAACA 1235
                                                                                            188;
                                                                                                        Similarity
                                                                                                                                                284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Index";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mitochondrial
Mammalia; Euth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (human)
                                                                                                                                                B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                          Conservative
                                                                                                                                             <1.
97
                                                                                                                                                                                                                         /organism="Homo sapiens"
/note="Vector: pAMP10; mRNA made from alveolar
/nbdeomyosarcoma, cDNA made by oligo-dT priming.
Non-directionally cloned. Size-selected on agarose
average insert size 600 bp. Reference: Krizman et a
(1996) Cancer Research 56:5380-5383."
                                                                                                                                                                      /tissue_type="alveolar rhabdomyosarcoma"
/lab_host="DH10B"
                                                                                                                                                                                                 /clone_lib="NCI_CGAP_Alv1"
                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Institute,
                                                                                                       7.8%;
78.3%;
                                                                                                                                               A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eutheria;
                                                                                                                                               71 C; 72 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               eukaryotes; Metazoa; Chordata;
heria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cancer
                                                                                         Score 111; DB 65;
Pred. No. 5.84e-62;
0; Mismatches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                               44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version
                                                                                                                                               Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA clone
                                                                                                                                               0
                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                            47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47;
                                                                                                                   Length 284;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               923094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               similar
                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1059
                                                                96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96
```

```
SOUR PROPERTY OF THE PROPERTY 
                                                                                                         밁
                                                                                                                                                            Qy
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ç
  맑
                                                γ
                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LT 11
HS1275688
AA484267;
g2213080
                                                     1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert_Strausbergenih.gov Tissue Procurement: L. Jeffrey Medeiros, M.D., Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: David B. Krizman, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html Insert Length: 258 Std Error: 0.00 Seq primer: -41ml3 fwd. ET from Amersham.
                                                                                                                                                                                                                                                                           1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-JUN-1997 (Rel. 52, Created)
28-JUN-1997 (Rel. 52, Last updated, Version 2)
28-B997 (Rel. 52, Last updated, Version 2)
28-B9902.sl NCI_CGAP_Kidl Homo sapiens cDNA clone 911378 similar to contains Alu repetitive element; contains element L1 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-JUN-1997
28-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryotae;
Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tumor Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCI-CGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "National Cancer
                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                    38 actttttttttttttttgtgagagagtcttgctctgtcacccaggctgcagtgcagtggtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGACTGAGGCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gaggccgagctgggaggatcacttgaac-ccaggaggtcgaggctgcagtgagctgtgat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -A-AAAACAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AG
                                                                                     cgatcttggcccactgcaacctctgcctgccag-gttcaagcaattctctttgcctcagcc
                                                   CCACCATGGCTCTCCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTC
                                                                                                                                                                                                                                                                           ACTTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCA 1116
-tttagtggagacagggtttcaccatgttggccaggctagtctcaaactcct
                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
178; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Index";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mitochondrial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/organism="Homo sapiens"
/note="Vector: pAMP10; mRNA made from invasive kidney
tumor, cDNA made by oligo-dT priming. Non-directionally
cloned. Size-selected on agarose gel, average insert size
600 bp. Reference: Krizman et al. (1996) Cancer Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B"
<1..>323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="NCI_CGAP_Kid1"
/tissue_type="kidney"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone="911378"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Institute,
                                                                                                                                                                                                                                                                                                                                                                                                          7.78;
76.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          eukaryotes; Metazoa; Chordata;
heria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                              Score 109; DB 66; Pred. No. 2.42e-60; 0; Mismatches 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72 G; 101 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome Anatomy
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                               1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1179
                                                                                                                                                                                                                     156
                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                215
```

1236 GTTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT

```
В
Ş
                                      밁
                                                                         Q
                                                                                                                                                      å
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                 Query Match 7.7%;
Best Local Similarity 76.7%;
Matches 178; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              URNAL
                                                                                                                                                                                                                                                                                                                                                                                                                   MRNA
                                                                               1177
                                                                                                                                                            1117
                                                                                                                                                                                                                                        1057
                                                                                                                      157
                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                            38 acttttttttttttttgtgagagagtcttgctctgtcacccaggctgcagtgcagtggtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
  GTTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT
                                                                                                 CCACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTC
                                                                                                                                                                             cgatcttggcccactgcaacctctgcctgccag-gttcaagcaattctctttgcctcagcc 156
                                                                                                                                                                                                                                      ACTITITITITITITITGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCA 1116
                                                                           -tttagtggagacagggtttcaccatgttggccaggctagtctcaaactcct 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA484267 323 bp mRNA EST 26-JUN-1997 ne88g02.s1 NCI_CGAP_Kidl Homo sapiens cDNA clone 911378 similar to contains Alu repetitive element; contains element L1 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Insert Length: 258 Std Error: 0.00
Seq primer: -41m13 fwd. ET from Amersham.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCI-CGAP.
National Cancer Institute, Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g2213080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 element ;.
AA484267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cDNA Library Preparation: David B. Krizman, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome S Clone distribution: NCI-CGAP clone distribution i found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue Procurement: L. J
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        www-bio.llnl.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tumor Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryotae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 323)
                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                   ρJ
                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="NCI_CGAP_Kid1"
/tissue_type="kidney"
/lab_host="DH10B"
<1..>323
a 87 c- 72 g 101 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pAMF10; mRNA made from invasive kidney tumor, cDNA made by oligo-dT priming. Non-directiona cloned. Size-selected on agarose gel, average insert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     size 600 bp. Reference:
Research 56:5380-5383."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="91137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mitochondrial eukaryotes; Metazoa; Chordata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                               Score 109; DB 32; Length 32; Pred. No. 2.42e-60; 0; Mismatches 51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                               72 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Jeffrey Medeiros, M.D., Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Krizman et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                      Length 323;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Non-directionally average insert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing Center information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (1996) Cancer
                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                          1176
                                                                                                                                                                                                                                                                          97
```

```
RESULT
ID H
                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
LOCUS
                                                                           Š
                                                                                                                 밁
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                 ğ
                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                               1237
                                                                                                                                                      1119 ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                              1059 TTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                 180 tttg-tagagatggggtttcaccatgttgcccaggcttgtctc 221
                                                                                                                                                                          120 ctgagtagctgggacttaccaacacacacaccagcacgcctggctaattttttgtattttt 179
                                                                                                                                                                                                                                                         61 gtcatggctcactgcagcctcaacctcccag-gcccaagtgatcctccagcctcagcctc 119
                                                                                                                                                                                                                                                                                                                                  2 ttttttttttttttgagacagggtcttgccctgtc-cccaggctggagtgcagtggcatg
                                                                           TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTC 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g2237532
EST.
                                                                                                                                                                                                                                                                                                                                                                                         ch 7.6%;
l Similarity 79.8%;
178; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence stop: 133.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Insert Length: 561 Std Error: 0.00 Seq primer: -40ml3 fwd. ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550
Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA502565 260 bp mRNA EST 10-JUL-1997 ng62110.sl NCI_CGAP_Lip2 Homo sapiens cDNA clone 939403 similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tissue Procurement: L. J
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         National Cancer Institute,
Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryotae; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA502565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contains Alu repetitive element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCI-CGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    //ww-bio.llnl.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA Library Preparation: David B. Krizman, Ph.D. CDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Clone distribution: NCI-CGAP clone distribution found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/note="Vector: pAMP10; mRNA made from liposarcoma, canade by oligo-dT priming. Non-directionally cloned. Size-selected on agarose gel, average insert size (Reference: Krizman et al. (1996) Cancer Research 66.5380-5383."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NCI_CGAP_Lip2"
/tissue_type="liposarcoma"
/lab_host="DH10B"
<1...260
a 73 c 60 g 80 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56:5380-5383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="939403"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..260
                                                                                                                                                                                                                                                                                                                                                                                         Score 108; DB 38;
Pred. No. 1.56e-59;
0; Mismatches 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jeffrey Medeiros, M.D., Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H
                                                                                                                                                                                                                                                                                                                                                                                             40;
                                                                                                                                                                                                                                                                                                                                                                                                                                Length 260;
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        information can
                                                                                                                                                                                                                                                                                                                                                                                             υ
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽.
                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dq 009
                                                                                                                                                                                                                                                                                                                                                                                             <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ag
```

HS1298476

standard;

RNA;

EST;

```
RESULT
LOCUS
                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NID
                                                                                                                                                               DEFINITION
                            KEYWORDS
SOURCE
                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert Strausberg4nih.gov Tissue Procurement: L. Jeffrey Medeiros, M.D., Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: David B. Krizman, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. NA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbr/image/image.html Insert Length: 561 Std Error: 0.00 Seq primer: -40m13 fwd. ET from Amersham High quality sequence stop: 133.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-JUL-1997 (Rel. 52, Created)
12-JUL-1997 (Rel. 52, Last updated, Version 2)
ng62f10.sl NCI_CGAP_Lip2 Homo sapiens cDNA clone 939403 similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1119 ACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCI-CGAP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalla; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contains Alu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tumor Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.6%;
Local Similarity 79.8%;
nes 178; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtcatggctcactgcagcctcaacctcccag-gcccaagtgatcctccagcctcagcctc 119
                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                               TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTC 1279
                                                                                                                                                               AA262532
zs17c02.i
                                                                               AA262532
                         EST.
                                                   g1897894
                                                                                                                                      to contains
human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                260 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Index";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repetitive element;.
                                                                                                                                2 300 bp mRNA EST 12-JUN-1997 .rl NCI_CGAP_GCB1 Homo sapiens cDNA clone 688442 5' similar ains Alu repetitive element:contains alument was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organismm"Homo sapiens"
/note="Vector: pAMP10; mNA made from liposarcoma, c/mote="Vector: pAMP10; mNA made from liposarcoma, c/made by oligo-dr priming. Non- directionally cloned. Size-selected on agarose gel, average insert size 60 Size-selected on agarose gel, average size-selected on agarose size-selected on agarose size-selected on agarose s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="NCI_CGAP_Lip2"
/tissue_type="liposarcoma"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 C; 60 G; 80 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cancer Genome Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 108; DB 69; Pred. No. 1.56e-59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 260;
                                                                                                                                                                                                                                                                                                                                                           221
                                                                                                                                      element MSR1 repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (CGAP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ភ
```

Search completed: Wed Mar Job time: 532 secs.

25 14:03:35 1998

```
сp
                                                                                                                                Сþ
                                                                                                                                                                                                                                                                                                                                                   BASE
ဌ
                                  밁
                                                                                                 В
                                                                                                                                                                  밁
                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
 1128
                                                                                                                                  1247
                                                                                                                                                                                                     1307
                                                                                                                                                                                                                                                                                                                                                     COUNT
                                                                                                 187
                                                                                                                                                                  128
                                                                                                                                                                                                                                   68
                  gagctatgattgggccactgcaccctagcctgggcgatagagtggagaccctgtca 300
                                                                                   agctactcaggaggctgaggcaagaggttcacttgagc-ccaggagatcgaggctgtaat 245
                                                                                                                                                     tetetattaaa-aaaaattaaaaaaattageeaggegtaatggggeacacetgtaattee 186
                                                                                                                                                                                                                  tgggaggactgcttgagcccaggaatttgagaccaacctgggcaagatagtgagacccta 127
 GAGCCATGGTGGTGCCACTGCACTCCAGCCTGGGTGACAGAGTGAGACCCTGTCA 107
                                                               AGCTACT-AGGAGACTGAGGCAGGAGGATCACTTGAGCTCCAGAGGTCAAGGCTGCAGA
                                                                                                                                  TGGGAGGCCAAAGTGAACCTAGGAGTTTGAGACCAGCCTGTACAACATGGCGAAATGCCA 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IMAGE Consortium (info@image.llnl.gov) for further information. Putative full length read
The vector to vector in the information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
Eukaryotae; r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Putative full length read
The vector to vector length is
Seg primer: -28ml3 rev2 ET from Amersham.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Tel: (301) 496-1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      National Cancer Institute,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCI-CGAP.
                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to
                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                  7.6%;
larity 76.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                   <1..>300
a 71 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3']. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not and Eco RI sites of the modified pT7T3 vector. Library went through one round of normalization, and was constructed by Bento Soares and M. Fatima Bonaldo." /Clone="685442"
                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="germinal center B
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="NCI_CGAP_GCB1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                Score 108; DB 20;
Pred. No. 1.56e-59;
                                                                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cancer Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ph.D
                                                                                                                                                                                                                                                                                                                                                     66
                                                                                                                                                                                                                                                                  53;
                                                                                                                                                                                                                                                                                                 Length 300;
                                                                                                                                                                                                                                                                                                                                                                                                     cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Anatomy Project (CGAP)
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                  Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hominidae;
                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                  1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA
```

THIS PAGE BLANK (USPTO)

٠,

0000	0000	Res		Sta	Dat	Pos	Sea	Nma	Sco	Title Desc Perfe N.A.		MPs		* *
11 12 14 14 16 17	1 9 8 7 6 5 8 9 10	no.	s o	tist	tabase	4	earched	tch	ring		on:	MPsrch_nn		* * * * * * * * * * * * * * * * * * *
103 101 101 99 99 97 98 98	1415 836 233 229 105 105 105	Score	red. No. core gre	ics:		processing	:-	STD :	table:	ription: ct Score: Sequence: Comp:	output	n n.a	Release 2. Copyright Di	
ω 4 4 0 0 0 0 0 0 0	7777.56.11	% Query Match I	No. is the greater the derived by	Mean	n-iss 1:k 10:	: Min	87538	Dbase	TABLE Gap 6	>US-08 (1-141 1415	wed Mar not gener		E C II	
	1415 838 838 2347 768 6769 6769 6769		numbe an or y anal	9.033;	ssued back1 2 ePCT91	imum Mato	seqs,	0;	defaul	UI I	25 ated	D	John 1993 ibuti	* * * * * * * * * * * *
114 17 7 7 7 7 7		DB	r of equal ysis	Var	:51 3 11:PC	ch 0	229	Query	1t	918A om 5 GAAA CTTT	14:03	databas	F. C , 19 On r	* *
US-07-602- PCT-US95-0 PCT-US95-0 US-08-370- US-08-265- US-08-265- US-08-265- US-08-310- PCT-US92-0	US-08-236- PCT-US94-1 PCT-US96-0 PCT-US96-0 US-08-236- PCT-US95-1 PCT-US95-1 PCT-US95-1 PCT-US95-1 US-08-480- US-08-261-	SUMMARIES	results to the of the	riance 5.5	3:52 4:53 CT92 12:PC	s 5 summarie	2999015 base	0		236-918A-7) from 5674704.seq AGTGGAAAGTTCTCCGGCAG TCACCTTTCAAGAGGCCGTC	3:54 1998;	e search,	. Collins, Bi 1994, 1995 n rights by I	
	Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence	Descript	predicted by score of the total score d	43; scale	5:54 6:55 7 T93 13:PCT9	Ö	й х 2			AG	MasPar ti 854.742 N	using Smith-	Biocomputing I University of Intelligenet	
	11, 200, A A A A	ion	by chance he result distribut	1.63	7:56 94 14						time 76. Million	1-Wat	Res	* *
Applicati Applicati Applicati Applicati Applicati Applicati Applicati Applicati	Applicati Applicati Applicati Applicati Applicati Applicati Applicat Applicat Applicat Applicat Applicat Applicat	1 1 1	nce to ult bei ibution	0	8:57 :PCT					TAAA	0 15	erman	earch U Edinbur	*
olicati olicatio olicatio icatio icatio icatio icatio olicatio olicatio olicatio	catio catio catio catio catio catio icati icati icati icati		hav ng		9:PC] 95 15:					AAAAA TTTTTT	Seconds		Unit. urgh,	*
	0.00e+00 0.00e+00 0.00e+00 1.35e-135 7.20e-133 9.80e-50 9.80e-50 9.80e-50	Pred.	e a printed,		90 PCT96					TGATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	tes	algorithm	U.K.	* *
- 447 - 447 - 466 - 455		No.	Ç.							A 1415 T	/sec			* * * * * * * * * * * * * * * * * * *

888888888888888888888888888888888888	(A	
H B B C C CHHRAN	44 91 45 91 45 91 ULT 1 US-08-2: xxxxxx 01-JAN-1 Sequence Sequence Sequence	02222222222000000000000000000000000000
APPLICANT: APPLICANT: APPLICANT: APPLICANT: TITLE OF IN NUMBER OF S CORRESPONNE ADDRESSEE CORRESPONNE ADDRESSEE COUNTRY: SETATE: STATE: STATE: STATE: STATE: COMPUTER RE MEDIUM TY: COMPUTER RE MEDIUM TO COMPUTER RE MEDIUM TO COMPUTER RE MEDIUM TO COMPUTER RE CORRENT APPLICATI APPLICATI APPLICATI APPLICATI APPLICATI APPLICATI APPLICATI APPLICATI ANAME:	7) 190 190	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
GENERAL INFORMATION: GENERAL INFORMATION: GENERAL INFORMATION: APPLICANT: GOODWIN, RAYMOND APPLICATION CORRESSEE: KATHYN A. AND STREET: 51 UNIVERSITY ST. ADDRESSEE: KATHYN A. AND STREET: 51 UNIVERSITY ST. ADDRESSEE: WASHINGTON COUNTRY: US TIP: 98101 COMPUTER: READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: APPLICATION DATA: APPLICATION UNMBER: US/08 FILING DATE: 06-May-1994 CLASSIFICATION DATA: APPLICATION UNMBER: US/08 FILING DATE: 07-May-1994 CLASSIFICATION UNMBER: US/08 FILING DATE: 07-May-1993 CLASSIFICATION UNMBER: US/08 APPLICATION UNMBER: US/08 APPLICATION UNMBER: US/08 FILING DATE: 07-May-1993 CLASSIFICATION UNMBER: US/08 FILING DATE: 07-May-1994 FILECOMMUNICATION INFORMATION TELEFRAX: (206) 23-0644 INFORMATION FOR SEQ ID NO: 7: SEQUENCE CHARACTERISTICS: LENGTH: 1415 base pairs	7 D D O O O O O O O O O O O O O O O O O	
T: Alderson, T: Goodwin, T: Goodwin, T: Goodwin, T: Goodwin, T: Smith, Cr. INVENTION: F SEQUENCES: NDENCE ADDRESS: Seattle Washington F US Seattle Washington F US Seattle Washington F US READABLE FOR TYPE: Flopp: Flopp: FREE Microsof RE: M	35100 35100 STANDA Cation	50000000000000000000000000000000000000
Raymrafic Cyto 18 S.S. n.A. sity dipy dipy dipy dipy dipy dipy dipy dip	co co ··	1
. G. G. eerson, eet intosh .5.3 Versic /236,91 /236,91 /060,84	7-906- 7-	αι κα κα κα κα κα και ι ι ι ι κα κα κα ικα ι
ed 4-1BE unex Cor	Sequence 1 Sequence 1	equence equ
poration	5, Applica 9, Applica	
	1.13e-4 1.13e-4 1.13e-4	0.0000000000000000000000000000000000000

```
Qy
                                                                                                             Qy
                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                        Ωy
         밁
                            δÃ
                                                  뮹
                                                                                         밁
                                                                                                                                    밁
                                                                                                                                                                             밁
                                                                                                                                                                                               Š
                                                                                                                                                                                                                     吊
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: 120
FEATURE: MAME_KEY: mail
LOCATION: 180
FEATURE: NAME_KEY: $10
LOCATION: 121
Sequence 1415 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     st Loc
                                                                       601
                                                                                            601
                                                                                                                                                                                                  421
                                                  661
                                                                                                                541
                                                                                                                                     541
                                                                                                                                                         481
                                                                                                                                                                             481
                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                             121
          721
                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL: NO ANTI-SENSE: NO IMMEDIATE SOURCE: CLONE: hu4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 100.0%;
Local Similarity 100.0%;
es 1415; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 AGTGGAAAGTTCTCCGGCAGCCCTGAGATCTCAAGAGTGACATTTGTGAGACCAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                        CAGGACACTCTCCGCAGATCATCTTCCTTTCTTTCTGCGCTGACGTCGACTGCGTTGCTTCT
                                                                                  CTCCAGCCGACCTCTCCGGGAGCATCCTCTGTGACCCCGGCCTGCCCCTGCGAGAGAGC
                                                                                                                          TGGATGGAAAGTCTGTGCTTGTGAATGGGACGAGGAGAGGAGGGACGTGGTCTGTGGACCAT
                                                                                                                                                                                                                                                                                CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA
                                                                                                                                                         GCTTTGGGACATTTAACGATCAGAAACGTGGCATCTGTCGACCCTGGACAAACTGTTCTT
                                                                                                                                                                             GCTTTGGGACATTTAACGATCAGAAACGTGGCATCTGTCGACCCTGGACAAACTGTTCTT
                                                                                                                                                                                                 CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGATTAAAATTCTCTTGGAATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCA 120
         CAGGACACTCTCCGCAGATCATCTCCTTCTTTCTTGCGCTGACGTCGACTGCGTTGCTCT
                                                                        CTCCAGCCGACCTCTCCGGGAGCATCCTCTGTGACCCCGGCCTGCCCCTGCGAGAGAGC
                                                                                                               TGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGACCAT
                                                                                                                                                                                                                                                                                                                                                GGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                            TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGATTAAAATTCTCTTGGAATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGGAAAGTTCTCCGGCAGCCCTGAGATCTCAAGAGTGACATTTGTGAGACCAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic
STRANDEDNESS:
nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
120..188
BP; 385 A; 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
120..887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
189..884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1415; DB 7;
Pred. No. 0.00e+00;
0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                              720
                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                  720
                                                                       660
                                                                                            660
                                                                                                                600
                                                                                                                                                                                                480
                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application P
Sequence 1, Application P
GENERAL INFORMATION:
APPLICANT: Byoung Se
TITLE OF INVENTION: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US94-10457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1201
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.50 inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                             ADDRESSEE: Barna
STREET: 306 E. S
CITY: Ithaca
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGGACAGAGCTGGTGATAAAAAAAAAAAAAAAAAA 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGGCCTCCCAAAGTGCTGGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGGCCTCCCAAAGTGCTGGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTCCTAGTAGCTGGAACTACAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACCACCATGGCTCTCTGCAGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTCAAAAGCAAGAACACCATCCTACATAATACCCAGGATTCCCCCCAACACACGCTTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGGCTGTTGGGACTTTCTTGAAAAGAAGCAAGGAAATATGAGTCATCCGCTATCACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGCTGCCGATTTCCAGAAGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGCTGCCGATTTCCAGAAGAAGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTATATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAGAGAGGAAGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGGACAGAGCTGGTGATAAAAAAAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTCAAAAGCAAGAACACCATCCTACATAATACCCAGGATTCCCCCCAACACACGTTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGGCTGTTGGGACTTTCTTGAAAAGAAGCAAGGAAATATGAGTCATCCGCTATCACAGC
                                                                                                                                                                      14850
                                                                                                                                                                                                                                                       E: Barnard
306 E. Stat
                                                                                                                                                                                          United
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD; DNA;
                                                                                                                                                                                                                                                         nard &
                                                                                                                                                                                          States
                                                                                                                                                                                                                                                                                                                                                                                      Se
                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                              PC/TUS9410457
PC/TUS9410457
                                                                                                                                                                                                                                                                                                                                                                  New
                                                                                                                                                                                                                                                                                                                                                                                        Kwon
                                                                                                                                                                                                                                                       Brown
                                                                                                                                                                                                                                                                                                                                            Human Rel Methods
                                                                                                                            50 inch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNC;
                                                                                     Version
                                                                                                                                                                                                                                                           Suite
                                                                                                                                                                                                                                                                                                                                                                Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 838
                                                                                                                               1.4Mb storage
                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                  Related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               840
```

FILING DATE: 2/1/93 PRIOR APPLICATION DATA:

APPLICATION NUMBER:

08/012,269

CLASSIFICATION:
PRIOR APPLICATION DATA:

```
288888888888888888888888
                                                                                                                                                                                                                             98888888888888888888888888888888888
                                  ğ
                                                                                                            888888888888
Ş
                   몺
                                                                       Query Match
Best Local S
Matches 83
                                                                                                          PAGES: 1963-1967
RELEVANT RESIDUES IN SEQ ID NO: all Sequence 838 BP; 218 A; 191 C; 215 G; 214
 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                   61
                                    90
                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL: NO ANTI-SENSE: NO FRAGMENT TYPE: n ORIGINAL SOURCE:
                                                                                                                                                       OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS: KWON, B.S., and Weissman, S.M.
TITLE: cDNA sequences of two inducible
JOURNAL: Proc. Natl. Acad. Sci. USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 11/7/88
ATTORNEY/AGENY INFORMATION:
NAME: Michaels, Christopher A.
REGISTRATION NUMBER: 34,390
REFERENCE/DOCKET NUMBER: kwnh4
                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: CH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                            CLONE:
POSITION IN GENOME:
                                                                                                                                                                                                                                                                                                IMMEDIATE SOURCE:
LIBRARY: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: 607-273-1711
                                                                                                                                                                                                                                                                                                                  CELL TYPE:
CELL LINE:
ORGANELLE:
          CATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGACAAGATCATTGCAGGATCC 120
                                  YOLUME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 7/30/92
 CATAGTAGCCACTCTGCTGCTGGTCCTCAACTTTGAGAGGACAAGATCATTGCAGGATCC
                                                                                                                                                                                                                                                    UNITS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 607-273-2609
                                                                                                                                                                                                                                                             MAP POSITION:
                                                                                                                                                                                                                                                                                                                                              TISSUE
                                                                                                                                                                                                                                                                                                                                                               DEVELOPMENTAL STAGE:
                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Human
                                                                                                                                                                                                     IDENTIFICATION METHOD: IDENTIFICATION METHOD:
                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                  NAME/KEY:
                                                                                                                                                                                                                                                                     CHROMOSOME/SEGMENT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                        INDIVIDUAL ISOLATE:
                                                                        837;
                                                                       h 59.1%;
Similarity 99.9%;
837; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                             TYPE:
                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             838
                                                                                                                                                                                                                                                                                                cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                  H4-1BB
                                                                                                                                                                                                                                                                                                                                     Lymphocytes
                                                                                                                                                                                                                                                                                                                                                                                                            n/a
                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA to
                                                                                                                                                                                                                                                                                                                                                                                                                                                          double stranded
                                                                                                                                                                                                                                                                                                                                                                         H4-1BB #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07/267,577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07/922,996
                                                                                                                                                                                                                                                                                                                                                                Differentiated
                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                      Score 836; DB 13;
Pred. No. 0.00e+00;
0; Mismatches 1
                                                                                                                                                                                                    Similarity members of
                                                                                                                                                                                                      members
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kwnh41bb
                                                                                                                                                                                                     to mc
                                                                                                            Η,
                                                                                                                                                                                                                                                                                                                                                                T-cell
                                                                                                                                                                                                               mouse 4-1BB
                                                                                                            0
                                                                                                                                                                T-cell genes
                                                                                                                                                                                                      superfami.
                                                                                                            other;
                                                                                        Length
                                                                        Indels
                                                                                          838;
                                                                                                                                                                                                             and
                                                                       0;
                                                                                                                                                                                                               other
                                                                       Gaps
                                                                        0
```

Sequence 7, Application PC/TUS9603965 Sequence 7, Application PC/TUS9603965 GENERAL INFORMATION:

APPLICANT: Kwon, Byoung Se
APPLICANT: Kang, Chang-Yuil
TITLE OF INVENTION: Monoclonal antibody against human
TITLE OF INVENTION: receptor 4-1BB
NUMBER OF SEQUENCES: 10

CORRESPONDENCE ADDRESS: ADDRESSEE: Ba STREET: 306 E CITY: Ithaca

306 East State Street, Suite

220

COMPUTER READABLE FORM:
MEDIOM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,

Version

COUNTRY: 14850 ΥN

USA

```
Š
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                  01-JAN-1900
                                                                                                                                                                                                                                                         PCT-US96-03965-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                GTCCGTTTCTCTGTTGTTAAACGGGGCAGAAAGAAACTCCTGTATATATTCAAACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCTCCTTCTTTCTTGCGCTGACGTCGACTGCGTTGCTCTTCCTGCTGTTCTTCCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGAATGGGACGAAGGAGAGGGACGTGGTCTGTGGACCATCTCCCAGCTGACCTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAGGTCAAGAACTGACAAAAAAAGGTTGTAAAGACTGTTGCTTTGGGACATTTAACGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCACTCCAGGGTTTCACTGCCTGGGGGCAGGATGCAGCATGTGTGAACAGGATTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGACCTGTGACATATGCAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACAGGAATCAGATTTGCAGTCC
                                                                                                                                                                                                                                                                                                     AGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAATAGGGCTGTTGGGACTTT 838
                                                                                                                                                                                                                                                                                                                                                     ATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCTGTAGCTGCCGATTTCCAGA
                                                                                                                                                                                                                                                                                                                                                                          ATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCTGTAGCTGCCGATTTCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                         GCTCCGTTTCTCTGTTGAAACGGGGCAGAAAGAAACTCCTGTATATATTCAAACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGAGCATCCTCTGTGACCCCGCCTGCCCTGCGAGAGAGCCAGGACACTCTCCGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAGCATCCTCTGTGACCCCGCCTGCCCTGCGAGAGAGCCCAGGACACTCTCCGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGACCATCTCCAGCCGACCTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAAGGTCAAGAACTGACAAAAAAAGGTTGTAAAAGACTGTTGCTTTGGGACATTTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCACTCCAGGGTTTCACTGCCTGGGGGGCAGGATGCAGCATGTGTGAACAGGATTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTAAAGGTGTTTTCAGGACCAGGAAGGAGTGTTCCTCCACCAGCAATGCAGAGTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTAAAGGTGTTTTCAGGACCAGGAAGGAGTGTTCCTCCACCAGCAATGCAGAGTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGACCTGTGACATATGCAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACAGGAATCAGATTTGCAGTCC
                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                                                                                                                        UNC;
                                                                                                                                                                                                                                                        838
                                                                                                                                                                                                                                                        묤
                                                                                                                                                                                                                                                                                                       917
                                                                                                                                                                                                                                                                                                                                                     859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259
                                                                                                                                                                                                                                                                                                                                                                                                  799
                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         559
```

888888888888888888888

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: mat_peptide
LOCATION: 41..802
OTHER INFORMATION: /codon_start= 41
OTHER INFORMATION: /product= "H4-1BB"
OTHER INFORMATION: /number= 1
Sequence 838 BP; 218 A; 191 C; 215 G; 214 T;
                                                                                                                                                            181
                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                  260
                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 607-273-2609
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: KW
TELECOMMUNICATION INFORMATION:
TELEPHONE: 607-273-1711
TELEFAX: 607-273-2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 07 FILING DATE: 07-NOV-1988 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: 41.805
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                           TTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACAGGAATCAGATTTGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                       CATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGACAAGATCATTGCAGGATCC
                                                                                                                                  CTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGACCTGTGACATATGCAGGCA
                                                                                                                                                                                                                                                                                                                                                   CATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGACAAGATCATTGCAGGATCC 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCATGGGAAACAGCTGTTACAA 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCATGGGAAACAGCTGTTACAA
GTGTAAAGGTGTTTTCAGGACCAGGAAGGAGTGTTCCTCCACCAGCAATGCAGAGTGTGA
                                                                                              CTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGACCTGTGACATATGCAGGCA
                                                                                                                                                                                                                           TTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACAGGAATCAGATTTGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
INDIVIDUAL ISOLATE: H4-1BB #1
DEVELOPMENTAL STAGE: Differen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TENGTH: 836 Date Tength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 00 FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 07 FILING DATE: 30-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 16-SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            837;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Michaels, Christopher A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 838 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
41..805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lymphocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59.1%;
99.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DATA:
.R: PCT/US96/03965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start= 41
/product= "H4-1BB"
/number= 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US 07/267,577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34,390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/922,996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US 08/012,269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us 08/122,796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Differentiated T-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 836; DB 15;
Pred. No. 0.00e+00;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KW05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215 G; 214 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                              319
                                                                                                                                                            240
                                                                                                                                                                                                                           259
                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
```

8888888888888888888888888888

 밁

0

용

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                    Sequence 1, Application PC/TUS960
Sequence 1, Application PC/TUS960
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Kwon, Byoung Se
APPLICANT: Kang, Chang Yuila
TITLE OF INVENTION: receptor
                                                                                                                                                                                                                                                                                                                                                                            01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US96-03965-1 STANDARD;
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 16-SEP-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 01-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                      860 AGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAATAGGGCTGTTGGGACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    380 CTGCACTCCAGGGTTTCACTGCCTGGGGGCAGGATGCAGCATGTGTGAACAGGATTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320 GTGTAAAGGTGTTTTCAGGACCAGGAAGGAGTGTTCCTCCACCAGCAATGCAGAGTGTGA 379
                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                CURRENT APPLICATION DATA: APPLICATION NUMBER: PC
                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTGAATGGGACGAAGGAGAGGGACGTGGTCTGTGGACCATCTCCAGCTGACCTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAATAGGGCTGTTGGGACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCTGTAGCTGCCGATTTCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCTGTAGCTGCCGATTTCCAGA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCCGTTTCTCTGTTGAAACGGGGCAGAAAGAAACTCCTGTATATATTCAAACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGAGCATCCTCTGTGACCCCGCCTGCCCTGCGAGAGAGCCAGGACACTCTCCGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGAATGGGACGAAGGAGAGGGACGTGGTCTGTGGACCATCTCCAGCCGACCTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAGGTCAAGAACTGACAAAAAAAAGGTTGTAAAGACTGTTGCTTTGGGACATTTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAGGTCAAGAACTGACAAAAAAAGGTTGTAAAGACTGTTGCTTTGGGACATTTAACGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCACTCCAGGGTTTCACTGCCTGGGGGCAGGATGCAGCATGTGTGAACAGGATTGTAA 360
                                                                                                                                                                                                                            STREET: 306
CITY: Ithaca
                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                       14850
                                                                                                                                                                                                                Ϋ́
                                                                                                                                                                                                                                      306 East
                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                      Barnard, Brown & Michaels 6 East State Street, Suite
                                                                                                                                                                                                                                                                                       Monoclonal antibody against human receptor 4-1BB
                                                                                                                                                                                                                                                                                                                                                   PC/TUS9603965
PC/TUS9603965
                                                                                                                                                                                                                                                                            10
              US 08/012,269
                                                                                                PCT/US96/03965
                                                                                                                                                                                                                                                                                                                                                                                                   DNA; UNC; 2347
                                                  08/122,796
                                                                                                                                                                                                                                                                                                                                                                                                    ₽P
                                                                                                                                                                                                                                       220
                                                                                                                           #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                      917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      559
```

88888888888888888888888

848

768

828

708

648 671 588

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAGES: 1963-1967

DATE: 1989

RELEVANT RESIDUES IN SEQ ID NO:
Sequence 2347 BP; 590 A; 561 C; 589 G
                                                                                                                                                                                                                                                                                                                                                                                                 138 ATTTCGCCATGGGAAACAACTGTTACAACGTGGTGGTCATTGTGCTGCTGCTAGTGGGCT 197
                                                                                                                                                                                                                                                                                                                                        198 GTGAGAAGGTGGGAGCCGTGCAGAACTCCTGTGATAACTGTCAGCCTGGTACTTTCTGC-
                                                                                                                                                                                                                                                                                                                                                                                 112 ATTTCATCATGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACT 171
                                                                                                                                                                                                                      315 GACAGCCGAACTGTAACATCTGCAGAGTGTGCGAGGCTATTTCAGGTTCAAGAAGTTTT 374
                                                                                                                                                                                                                                                                                                                      172 TTGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 607-273-2609 INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 2347 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: - US 07/267,577 FILING DATE: 07-NOV-1988 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL: FIC
CGAACTGCTCTAGACGGAAGGTCTGTGCTTAAGACCGGGACCACGGAGAAGGACGTGG
                                                                                                                                                            GCTCCTCTACCCACAACGCGGAGTGTGAGTGCATTGAAGGATTCCATTGCTTGGGGCCAC 434
                                                                                                                                                                                                                                                                                   AGAA-AATACAATCCAG-TCTGCAAGAGCTGCCCTCCAAGTACCTTCTCCAGCATAGGTG
                           AAGACTGTTGCTTTGGGACATTTAACGATCAGAAACGT---GGCATCTGTCGACCCTGGA
                                               AAACCTGTAGCTTGGGAACATTTAATGACCAGAACGGTACTGGCGTCTGTCGACCCTGGA
                                                                                     GATGCAGCATGTGTGAACAGGATTGTAAACAAGGTCAAGAACTGACAAAAAAAGGTTGTA
                                                                                                                AGTGCACCAGATGTGAAAAGGACTGCAGGCCTGGCCAGGAGCTAACGAAGCAGGGTTGCA 494
                                                                                                                                            GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAG
                                                                                                                                                                                                     ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS: Kwon, Byoung Se
AUTHORS: et al.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Michaels, Christopher A REGISTRATION NUMBER: 34,390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: KW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       h 16.5%;
Similarity 69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              March
1963-1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              i: et al.,
cDNA sequences of two inducible T-cell genes
r. proc. Natl. Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 607-273-1711
607-273-2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
146..916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       murine 4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
146..913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US 07/922,996
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 233; DB 15; L
Pred. No. 1.35e-135;
0; Mismatches 225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KW05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589 G; 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1: FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ROM 1 TO 2347
T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2347;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
614
                                                        554
                                                                                     471
                                                                                                                                             411
                                                                                                                                                                                                       351
                                                                                                                                                                                                                                                               291
                                                                                                                                                                                                                                                                                            314
                            528
                                                                                                                                                                                                                                                                                                                                                                                                                                           ω,
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 5, Application US/08236918A. Sequence 5, Application US/08236918A Patent No. 5674704 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-236-918A-5
                                                                                              TELEFAX: (206) 233-064 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     732
                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Power Macintosh
OPERATING SYSTEM: Apple 7.5.3
SOFTWARE: Microsoft Word, Version #6.0.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                       REFERENCE/DOCKET NUMBER: 28
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 587-0430
          MOLECULE TYPE: CI
                                                                                                                                                                                                                CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0:
FILING DATE: 07-May-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: GOOGWin, Raymond G.
APPLICANT: Smith, Craig A.
TITLE OF INVENTION: Cytokine Designated 4-1BB Ligand
NUMBER OF SEQUENCES: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                    LENGIH:
TYPE: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGAGGACCAGGAGGCACTCCTTGCAGGTCCTTACCTTGTTCCTGGCGCTGACATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGAAACTCCTGTATATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAAAATTCCCCCACATATTCAAGCAACCATTTAAGAAGACCACTGGAGCAGCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTTGCTGCTGG-CC--CTGATCTTCATTACTCTCTGTTCTCTGTGCTCAAATGGATCA 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGTGGACCCCCTGTGGTGAGCTTCTCCCC--AGTA-CCACCATTTCTGTGACTCCAG
                                                   TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                               NAME: Anderson, Kathryn A. REGISTRATION NUMBER: 32,172
                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/236,918A FILING DATE: 06-May-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCGTTGCTCCTGCTGCTTCCTCCTCACGCTCCGTTTCTCTGTTGTTAAACGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGTGGACCATCTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCC
                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                            98101
                                                                                                                                                                                                                                                                                                                                                                                                                                        Washington
: US
                                                                               768 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Kathryn A.
51 University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alderson, Mark R
Ň
                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD; DNA; UNC;
                         cDNA to mRNA
                                                                                                          233-0644
200: 5:
                                                                                                                                                                                                                                                            US 08/060,843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Anderson,
Street
                                                                                                                                                                        2801-B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immunex Corporation
```

28888888888888888888888

δÃ 밁

Matches

δÃ 밁 Š 밁 δÃ 밁 å 밁 õ

495

435 352 292

232

257

Š 吊

```
RESULT
ID PO
AC XI
                                                                                                                Š
                                                                                                                                            멍
                                                                                                                                                                 Q
                                                                                                                                                                                           밁
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                           밁
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
  XXXXXX
             PCT-US95-10202-20 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 768 BP; 188 A; 186 C; 217 G; 177 T; 0 other;
                                                                                                                                                                                                                                                                                         478 CCCCCTGTGGTGAGCTTCTCCCC--AGTA-CCACCATTTCTGTGACTCCAGAGGGAGGA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                 837
                                                                                                                    777
                                                                                                                                                                                               595
                                                                                                                                                                                                                         657
                                                                                                                                                                                                                                                                           597
                                                                                                                                                                                                                                                                                                                              537
                                                                                                                                                                                                                                                                                                                                          418 TCTCTAGACGGAAGGTCTGTGCTTAAGACCGGGACCACGGAGAAGGACGTGGTGTGTGGA 477
                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                         358
                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                           712
                                                                                                                                                                      717
                                                                                                                                                                                                                                                                                                                                                                                                                                                            298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GTGGGAGCCGTGCAGAACTCCTGTGATAACTGTCAGCCTGGTACTTTCTGC-AGAA-AAT 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ATGGGAAACAACTGTTACAACGTGGTGGTCATTGTGCTGCTGCTAGTGGGCTGTGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMMEDIATE
CLONE:
                                                               GCTTGTAGCTGCCGATGTCCACAGGAAGAAGAAGAAGGAGGA 750
                                                                                                                  CTCCTGTATATATTCAAACAACCACTTATGAGACCAGTACAAACTACTCAAGAGGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                             AGCTTGGGAACATTTAATGACCAGAACGGTACTGGCGTCTGTCGACCCTGGACGGAACTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATGTGAAAAGGACTGCAGGCCTGGCCAGGAGCTAACGAAGCAGGGTTGCAAAACCTGT
                                                                                                                                           TTCCCCCACATATTCAAGCAACCATTTAAGAAGACCACTGGAGCAGCTCAAGAGGAAGAT 711
                                                                                                                                                                      CTGG-CC--CTGATCTTCATTACTCTCCTGTTCTCTGTGCTCAAATGGATCAGGAAAAAA 651
                                                                                                                                                                                                                        GAGCCAGGACACTCTCCGCAGATCATCTCCTTCTTTCTTGCGCTGACGTCGACTGCGTTG
                                                                                                                                                                                                                                                CCAGGAGGCCACTCCTTGCAGGTCCTTACCTTGTTCCTGGCGCTGACATCGGCTTTGCTG
                                                                                                                                                                                                                                                                           CCATCTCCAGCCGACCTCTCCGGGGAGCATCCTCTGTGACCCCGGCCTGCCCCTGCGAGA
                                                                                                                                                                                                                                                                                                                           TCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGA
                                                                                                                                                                                                                                                                                                                                                                              TGCTTTGGGACATTTAACGATCAGAAACGT---GGCATCTGTCGACCCTGGACAAACTGT 536
                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGGCAGGATGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCACAACGCGGAGTGTGAGTGCATTGAAGGATTCCATTGCTTGGGGCCCACAGTGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGTAACATCTGCAGAGTGTGTGCAGGCTATTTCAGGTTCAAGAAGTTTTGCTCCTCT 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAATCAGATTTGCAGTCCCTGTCCTCCAATAGTTTCTCCAGCGCAGGTGGACAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAATCCAG-TCTGCAAGAGCTGCCCTCCAAGTACCTTCTCCAGCATAGGTGGACAGCCG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 16.2%;
Similarity 69.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mu4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mat_peptide
70..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sg
             DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 7.20e-133;
0; Mismatches 223; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 229; DB 7; L
Pred. No. 7.20e-133;
              UNC;
              6769
             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                        716
                                                                                                                                                                                                                                                 594
                                                                                                                                                                                                                                                                           656
                                                                                                                                                                                                                                                                                                                            596
                                                                                                                                                                                                                                                                                                                                                                                                      417
                                                                                                                                                                                                                                                                                                                                                                                                                                  479
                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                    836
                                                                                                                                                                     776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
```

```
밁
                                Query Match
Best Local Similarity
Matches 175; Conser
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1900
Sequence 20, Application PC/TUS9510202.
Sequence 20, Application PC/TUS9510202
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/300,266
EILLING DATE: 02-SEP-1994
PRIOR APPLICATION UNBER: US 08/289,221
APPLICATION NUMBER: US 08/289,221
FILING DATE: 12-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                              TELEFAX: 202-962-8300 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 24-MAR-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                             ANTI-SENSE: NO ORIGINAL SOURCE: ORGANISM: Hom
                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US 0
FILING DATE: 29-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 16-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                        TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 6769 base pair
                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION: TELEPHONE: 202-962-4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Rclease #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: In Vivo Mutations and Polymorphisms TITLE OF INVENTION: in the 17q-Linked Breast and Ovarian TITLE OF INVENTION: Susceptibility Gene
                                                                                                                            HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti,
STREET: 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                         NAME: Ihnen, Jeffrey L.
REGISTRATION NUMBER: 28,957
REFERENCE/DOCKET NUMBER: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION:
                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: PCT/US95/10202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Washington
                                                                              ANISM: Homo sapiens
6769 BP; 1954 A; 1377 C; 1469 G; 1937 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20005
                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엉
                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Simard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Durocher, Francine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shattuck-Eidens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nakamura, Yusuke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Emi, Mitsuru
                                                                                                                                                      linear
                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                76.1%;
                                                                                                                                        DNA (genomic)
                                                                                                                                                                 double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jacques
                                                                                                                                                                                                                                                                                                                                                                                                                        US 08/348,824
                                                                                                                                                                                                                                                                                                                                                                                        US 08-308,104
                                                                                                                                                                                                                                                                                                                                                                                                                                                           US 08/409,305
                                  Score 105; DB 14; Pred. No. 9.80e-50; % Mismatches 52;
                                                                                                                                                                                                                                                            24884-109347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Donna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Version #1.30
                                                         Length
                                    Indels
                                                                                32 other;
                                                            6769;
                                  ω
,,
                                  Gaps
```

```
8888888888888888888888888888888
                                                                                                                                                                                                                                                                                                388888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            СЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 20, Application Sequence 20, Application GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US95-10203-20 STANDARD; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08-308,104
FILING DATE: 16-SEP-1994
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                             APPLICATION NUMBER: US 08/409,305
FILING DATE: 24-MAR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/348,824
FILING DATE: 29-NOV-1994
                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                FILING DATE: 12-AUG-1994 ATTORNEY/AGENT INFORMATION:
                                                                FILING DATE: 02-SEP-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAGTTAGTCAGGTGTGGTGGCCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAATTAGCCGGGGTGGTGGCTTATGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGC 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGAATCGCTTGAAC-CCAGGAAGCAGAGGTTGCAGTGAGCCAAGATCGCACCATTGC
                                                                                       APPLICATION NUMBER:
         NAME: Ihnen, Jeffrey L. REGISTRATION NUMBER: 28,957
                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                           20005
                                                                                                                                                                                                                                                                                                                                                                                          Washington
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                      2: Venable, Baetjer, Howard & Civiletti, 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shattuck-Eidens, Do
Tavtigian, Sean V.
Wiseman, Roger W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Futreal, P. Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Miki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Harshman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kamb,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Swenson, Jeff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Goldgar, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Skolnick, Mark
                                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alexander
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yoshio
NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   17q-Linked Breast and Ovarian Cancer Susceptibility Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PC/TUS9510203
PC/TUS9510203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Keith D.
                                                                                       US 08/300,266
                                                       US 08/289,221
                                                                                                                                                                                                                                                                            PCT/US95/10203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      m m
24884-109347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Donna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNC; 6769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΒP
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28688888888888888
                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                    Sequence 20, Application P
Sequence 20, Application P
GENERAL INFORMATION:
APPLICANT: Skolnick, M
APPLICANT: Goldgar, Da
                                                                                                                                                                                                                                                                                                                                                                                                         1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2850 AAAAAATTAGCCGGGGTGGTGGTTATGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGC 2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens Sequence 6769 BP; 1954 A; 1377 C; 1469 G; 1937 T; 32 other:
                                                                                                                                                                                                                                                                                                                                          01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                              PCT-US95-10220-20 STANDARD; DNA; UNC; 6769 BP
                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 202-962-8300 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       V Match 7.4%;
Local Similarity 76.1%;
      SOFTWARE: PATENTIN REACCURRENT APPLICATION NUMBER: PC: FILING DATE:
                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                         APPLICANT: Futreal, TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL: NANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                               STREET: 1201
                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAGAATCGCTTGAAC-CCAGGAAGCAGAGGTTGCAGTGAGCCAAGATCGCACCATTGC 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
CLASSIFICATION:
                                                                                           COUNTRY: UZIP: 20005
                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                   E: Venable, Baetjer, Howard & Civiletti, LLP 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                         Skolnick, Mark
Goldgar, David
Miki, Yoshio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6769 base pairs
                                                                                                                                                                                               Wiseman, Futreal,
                                                                                                      USA
                                       PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                     Shattuck-Eidens, Donna Tavtigian, Sean V.
                                                                                                                                                                                                                                                               Swenson,
                                                                                                                                                                                                                                           Harshman, Keith D
                                                                                                                                                                                                                                                       Kamb,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202-962-4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 double
                                                                                                                                                                                                                                                      Alexander
                                                                                                                                                                                                                                                               Jeff
                                                                                                                                                            P. Andrew
P. Andrew
Method for Diagnosing a
Method for Diagnosing a
Method for Diagnosing a
                                                                                                                                                                                                          Roger W.
                                                                                                                                                                                                                                                                                                                    PC/TUS9510220
PC/TUS9510220
                    PCT/US95/10220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 105; DB 14;
Pred. No. 9.80e-50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20:
                                                                                                                                                                                                                                                                                      H H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 6769;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels 3;
                                                                                                                                                                              Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

```
RESULTA
                                                                                                                                                                                 ဌ
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                             ဌ
                                                                                                                                                                                                                                                                                                                    ဌ
                                                                                                                                                                                                                                                                                                                                                                                                             វ888888888888888
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                  1107
                                                                                                                                                                                                                                                                          1226
                                                                            Sequence 20, Application US/08480784
Sequence 20, Application US/08480784
Patent No. 5693473
                                                                                                                                                                                                        2969
                                                                                                                                                                                                                              1167
                                                                                                                                                                                                                                                                                                                      1286
                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
Sequence 6769 BP; 1954 A; 1377 C; 1469 G; 1937 T; 32 other;
                                                                                                               01-JAN-1900
                                                                                                                                     US-08-480-784-20 STANDARD; DNA; UNC;
                                                                                                                                                                                                                                                   2910
                                                                                                                                                                                                                                                                                               2850 AAAAAATTAGCCGGGGTGGCTTATGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGC 2909
                                                                                                                           XXXXXX
                                                        GENERAL INFORMATION: APPLICANT: Skolnio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 20:
                                                                                                                                                                                                                                                                                                                                                                           Match 7.4%;
Local Similarity 76.1%;
                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL: NO ANTI-SENSE: NO ORIGINAL SOURCE:
                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: 202-962-4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08
FILING DATE: 12-AUG-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 08/348,824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 16-SEP-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 29-NOV-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                          AGGAGAATCGCTTGAAC-CCAGGAAGCAGAGGTTGCAGTGAGCCAAGATCGCACCATTGC 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RIOR APPLICATION DATA APPLICATION NUMBER:
                                                                                                                                                                                 AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                                                                                                                                                                                                                                                                                    NAME: Ihnen, Jeffrey L.
REGISTRATION NUMBER: 28,957
REFERENCE/DOCKET NUMBER: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 0 FILING DATE: 24-MAR-1995
                                                                                                                                                                                                                             AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGCTGCCACTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 6769 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 01
FILING DATE: 29-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 0 FILING DATE: 02-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                  175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DATE:
                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                 Goldgar, David
Miki, Yoshio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202-962-8300
  Harshman, Keith D.
                        Swenson,
                                                        Skolnick, Mark
              Kamb,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DATA:
            Alexander
                      Jeff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US 08/289,221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US 08-308,104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us 08/409,305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 08/300,266
                                                                                                                                                                                                                                                                                                                                                                            Score 105; DB 14; Length 6769; Pred. No. 9.80e-50;
                                                                                                                                                                                                                                                                                                                                                                0;
                                              m =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24884-109347
                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                     6769
                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                ω
••
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                          1168
```

```
ç
                        밁
                                            င္မ
                                                                      밁
                                                                                                                      밁
                                                                                                                                                                                               Query Match
Best Local S
Matches 17
                                                                                               1286
1167
                                                                                                                      ORGANISM: Homo sapiens
Sequence 6769 BP; 1954 A; 1377 C; 1469 G; 1937 T; 32 other;
                        2910
                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 08/300,266
FILLING DATE: 02-SEP-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/289,221
FILLING DATE: 12-AUG-1994
ATTORNEY/AGENT INFORMATION:
NAME: Inhen, Jeffrey L.
NAME: Inhen, Jeffrey L.
REGISTRATION NUMBER: 28,957
                                                                                                                                                                                                                                                                                                        TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 6769 base pair
                                                                                                                                                                                                                                  MOLECULE TYPE: D
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PILING DATE: 24-MAR-19
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08
FILING DATE: 29-NOV-19
PRIOR APPLICATION NUMBER: 08
APPLICATION NUMBER: 08
FILING DATE: 16-SEP-11
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 24
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4810
                                                                                                                                                                                                                       ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0:
FILING DATE: 24-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Futreal, P. Andrew
TITLE OF INVENTION: 179-Linked Bree
TITLE OF INVENTION: Susceptibility
NUMBER OF SEQUENCES: 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
            AGGAGAATCGCTTGAAC-CCAGGAAGCAGAGGTTGCAGTGAGCCAAGATCGCACCATTGC
                                                                                             AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGC
                                              AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                                    AAAAAATTAGCCGGGGTGGTGGCTTATGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGC
                                                                                                                                                                                                           ORGANISM:
                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Washington
                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                          7.48;
11 Similarity 76.18;
175; Conservation
                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Venable, Baetjer, Howard & Civiletti, LLP 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                          6769 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tavtigian, Sean V
Wiseman, Roger W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shattuck-Eidens,
                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UMBER: US 08/308,104
16-SEP-1994
                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-NOV-1994
                                                                                                                                                                                                                                                                                    double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17q-Linked Breast and Ovarian Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US 08/409,305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 08/348,824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/480,784
                                                                                                                                         Score 105; Db ,
Pred. No. 9.80e-50;
                                                                                                                                                                                                                                                                                                                                                                                     24884-109347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Donna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene
                                                                                                                                                                    Length 6769;
                                                                                                                                              Indels
                                                                                                                                              ω
••
                                                                                                                                             Gaps
                       2968
                                              1168
                                                                      2909
```

ω

밁

```
RESULT
PROCESS OF THE COLOR OF 
Ş
                                                                                  밁
                                                                                                                                                   δÃ
                                                                                                                                                                                                                                          윰
                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                នៃនិនិនិនិ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 7.3%;
Best Local Similarity 76.1%;
Matches 172; Conservative
                                                                                                                                                                1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 11, Application US/08261578. Sequence 11, Application US/08261578 Patent No. 5491075
                                                                                                                                                                                                                                                                                                                                                                     1058 TTTTTTTTTTTTGAGATGGAGTCTCACGCTGTAGCCCAGGCTGGAGTGCAGTGGCACC 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JT 10
US-08-261-578-11 STANDARD; DNA; UNC; 2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
quence 2048 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 69: TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 435
PRIOR APPLICATION UDATA:
APPLICATION NUMBER: US 07/602,608
FILLING DATE: 24-OCT-1990
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: CLONING AND EXPRESSION OF BIOLOGICALLY TITLE OF INVENTION: ACTIVE ALPHA-N-ACETYLGALACTOSAMINIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Ioannou, Yian APPLICANT: Wang, Anne M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                              ATCTCAGCTCACTGCAACCTCTGGCTCCCAG-GTTCAAGCGATTTTCCTGCCTCAGCCTC 1176
                                                                                                                                                                                                                                                                                                                   TTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/261,578 FILING DATE: '17-JUN-1994
        CTAG-TAGCTGGAACTACAAGGAAGGGCCACCACCTGACTAACTTTTTT-GTTTTTTG 1236
                                                                                                                                                            ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS: doubt TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
DEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coruzzi, Laura A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bishop, David F.
Ioannou, Yiannis A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Desnick,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA (genomic)
457 A; 540 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Robert J.
David F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30,742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 103; DB 5; Length 2048
Pred. No. 1.96e-48;
0; Mismatches 51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6923-008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       552 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                            1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
```

```
Ş
                                                                               밁
                                                                                                         Qy
                                                                                                                                                               δÃ
                                                                                                                                    Вþ
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                   Query Match
Best Local S
Matches 17
                                                     1179
                                                                                                          1119
                                                                                                                                    1118
                                                                                                                                                            1059 TITTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1237
                                                                                                                                                                                          1058 TTTTTTTTTTTTTGAGATGGAGTCTCACGCTGTAGCCCAGGCTGGAGTGCAGTGGCACC 1117
                                                                                                                                                                                                                                                                        MOLECULE TYPE: DNA (genomic) Sequence 2048 BP; 457 A; 540 C; 552 G; 499 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1237 TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAA 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 11, Application US/07602608 Sequence 11, Application US/07602608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-07-602-608-11 STANDARD; DNA; UNC; 2048 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/07/602,608
FILING DATE: 24-OCT-1990
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: COTUZZI, Laura A.
REGISTRATION NUMBER: 30,742
REFERENCE/DOCKET NUMBER: 6923-008
                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 2048 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                   Match 7.3%; Score 103; DB 4; Local Similarity 76.1%; Pred. No. 1.96e-48; PS 172; Conservative 0; Mismatches 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: WADY, ADDE M.
TITLE OF INVENTION: CLONING AND EXPRESSION OF BIOLOGICALLY
TITLE OF INVENTION: ACTIVE ALPHA-N-ACETYLGALACTOSAMINIDASE
NUMBER OF SEQUENCES: 24
                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (41. TELEFAX: 66141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGTAGAGACAGGGTTTCACCATGTTGGCCAGGCTACTCTCAAA 1282
               TTCAGTAGAGACAGGGTTTCACCATGTTGGCCAGGCTACTCTCAAA 1282
                                                   CTAG-TAGCTGGAACTACAAGGAAGGGCCACCACACCTGACTTTTTT-GTTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 1155 A
CITY: New York
STATE: New Yor
TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAA 1282
                                                                              ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                  ATCTCAGCTCACTGCAACCTCTGGCTCCCAG-GTTCAAGCGATTTTCCTGCCTCAGCCTC 1176
                                                                                                                                                                                                                                                                                                   TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                538252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Desnick, Robert J. Bishop, David F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ioannou, Yiannis A.
Wang, Anne M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                     PENNIE
                                                                                                                                                                                                                                                                                                                  double
                                                                                                                                                                                                                     51;
                                                                                                                                                                                                                                             Length 2048;
                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                   Gaps
                                                                                                                                                                1118
```

```
IRESULTA
                                                                                             88888888888888888
                                                                                                                                                                                                                                                                                                                                Query Match
6074 CTTTTTTTTTTTTTGAGACGGGGTCTCGCTCTGTCGCCCCAGGATGGAGTGCAGTGGTGT 6133
                                                                                         IDENTIFICATION METHOD:
OTHER INFORMATION: 7.0 kb Not 1-Not
OTHER INFORMATION: fragment; Derived from human placental
OTHER INFORMATION: genomic DNA; also referred to as JT106
Sequence 7210 BP; 1878 A; 1688 C; 2052 G; 1592 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 10, Application PC/TUS9507201. Sequence 10, Application PC/TUS9507201 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             XXXXXX
01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US95-07201-10 STANDARD; DNA; UNC; 7210 BP
                                                                                                                                                                                                                                                                                                          TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 10
SEQUENCE CHARACTERISTICS:
LENGTH: 7210 Base Pairs
                                7.18;
Local Similarity 76.28;
hes 176; Conservation
                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 36434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 07/95
FILING DATE: 24-SEP-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/2 FILING DATE: 07-JUN-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: STREET: New York
CITY: New York
""ATE: New York
""AA
                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 30-DEC-1 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Chader, Gerald J.; Becerra, Sofia APPLICANT: Patricia; Schwartz, Joan P.; APPLICANT: Taniwaki, Takayuki
                                                                                                                                                                                                                  IMMEDIATE SOURCE:
                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: PIGMENT EPITHELIUM
TITLE OF INVENTION: DERIVED FACTOR: CHARACTERIZATION GENOMIC
TITLE OF INVENTION: ORGANIZATION AND SEQUENCE OF THE PEDF GENE
                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 08/30 FILING DATE: 30-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 0 CLASSIFICATION:
                                                                                                                                                               NAME/KEY: JT6A
LOCATION:
                                                                                                                                                                                                    LIBRARY:
                                                                                                                                                                                                                                ORGANISM:
                                                                                                                                                                                                                                                                                 TYPE: Nucleic Acid
STRANDEDNESS: Doub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC Compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        345 Park Avenue
                                                                                                                                                                                                     DASH II
                                                                                                                                                                                                                                                                   Unknown
                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Morgan & Finnegan, L.L.P
                                                                                                                                                                                                                                                        Genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-JUN-1995
                                                                                                                                                                                                                                                                                  Double
                                                                                                                                                                                                                                                                                                                                                                                                                                                       07/952,796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08/257,963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/367,841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT/US95/07201
                                                     Score 101; DB 14; Length 7210; Pred. No. 3.91e-47;
                                                                                                                                                                                                                                                                                                                                       10:
                                       0; Mismatches 51; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                          20264126PCT
                                       Gaps
                                       4;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6251 TTTAGTAGAGATGGGGTTTCACCGTGTTGACTAGGCTGGTCTCGAACTCCT 6301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 43, Application PC/TUS9507201 Sequence 43, Application PC/TUS9507201 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1118 CACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6134 GATCTCAGCTCACTGCAACCTCCGGCCTCCCAG-GTTTAAGTGATTCTCCTGCCTCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1058 CTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCAC 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XXXXXX
01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US95-07201-43 STANDARD; DNA; UNC;
                                                                                                                                                                                                            FILING DATE: 30-DEC-1994

PRIOR APPLICATION NUMBER: 08/257,963

APPLICATION NUMBER: 08/257,963

FILING DATE: 07-JUN 1994

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 07/952,796

FILING DATE: 24-SEP-1992

ATTORNEY/AGENT INFORMATION:

NAME: DOROTHY R. AUTH

REGISTRATION NUMBER: 36434

REGISTRATION NUMBER: 36434
                                                                                                                                                TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: ITITLE OF INVENTION: ITITLE OF INVENTION: COUNTRY OF SEQUENCES:
                                                                                                                                                                       TELEPHONE: (212) 758-4800
                                                       FEATURE:
                                                                  MOLECULE TYPE: Genomic DNP
                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
APPLICATION NUMBER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Patricia; Schwartz, Joan P.;
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION: fu
                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/3 FILING DATE: 30-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC Compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WORDPERFECT 5.1
                                          NAME/KEY: P1-147
                                                                               TOPOLOGY:
                                                                                           STRANDEDNESS: Double
                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCAAGTAGCTGGGACTACAGGTGCGCGCCAACACCCTGGGTAATTTTGTT-TGTATT- 6250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                       Nucleic Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New York
                                                                                                                        22481 Base Pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                345 Park Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chader, Gerald J.; Becerra,
                                                                                Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Morgan & Finnegan, L.L.P
                                                                                                                                                                                                                                                                                                                                                                                      06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIGMENT EPITHELIUM

DERIVED FACTOR: CHARACTERIZATION GENOMIC

ORGANIZATION AND SEQUENCE OF THE PEDF GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
 full length genomic
                                                                                                                                                                                                                                                                                                                                                 08/367,841
                                                                                                                                                                                                                                                                                                                                                                                                   PCT/US95/07201
                                                                                                                                                  43:
                                                                                                                                                                                                    20264126PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sofia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1236
```

```
IRESULAR

RESULAR

RE
                                                                                88888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                န္တင္ပ
                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
  Best Local Similarity
                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/370
FILING DATE: 10-JAN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Timian, Susan J.
REGISTRATION UNMBER: 34,103
REFERENCE/DOCKET NUMBER: 2089
TELECOMMUNICATION INFORMATION:
TELEPHONE: (716)263-1636
TELEPEAX: (716)263-1600
INFORMATION FOR SEO, ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 6, Application US/08370975B. Sequence 6, Application US/08370975B Patent No. 5622851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: sequence for PEDF plus flanking sequences Sequence 22481 BP; 5280 A; 5708 C; 6136 G; 5347 T; 10 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 5622851 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6244 TTTAGTAGAGATGGGGTTTCACCGTGTTGACTAGGCTGGTCTCGAACTCCT 6294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1118 CACCATGGCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCT 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6127 GATCTCAGCTCACTGCAACCTCCCGCCTCCCAG-GTTTAAGTGATTCTCCTGCCTCAGACT 6185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6067 CTTTTTTCTTTTTTGAGACGGGGTCTCGCTCTGTCGCCCAGGATGGAGTGCAGTGGTGT 6126
                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-370-975B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1058 CTTTTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCAC 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      XXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Maley, Frank
APPLICANT: Maley, Gladys F.
APPLICANT: Weiner, Karen X.B.
TITLE OF INVENTION: Human Deoxycytidylate Deaminase
                                                                                                                                MOLECULE TYPE: DNA (genomic) POSITION IN GENOME:
                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1. CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCAAGTAGCTGGGACTACAGGTGCGCGCCAACACACCTGGGTAATTTTGTT-TGTATT-
                                                                          CHROMOSOME/SEGMENT: 4
ence 20303 BP; 5454 A;
                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Nixon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.1%;
11 Similarity 76.2%;
176; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rochester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Nixon, Hargrave, Devans & Doyle Clinton Square, P.O. Box 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
  7.0%;
80.1%;
                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS/MS-DOS
                                                                             4q35
1; 4115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/370,975B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 101; DB 14; Pred. No. 3.91e-47;
Score 99; DB 7; L
Pred. No. 7.75e-46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                    20894/80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNC;
                                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                             5052 G; 5682 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Box 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뫉
                             Length 20303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 22481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
```

```
δÃ
                         망
                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                 Query Match
Best Local Similarity
Matches 185; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
           8189 TTTTTTTTTTTTGAGACAGAGTCTTGCTCTGTCACCCAGGCTGGAGTGCAGTGGCACA 8248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6226
  1059
                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence 1, Application US/08370975B. Sequence 1, Application US/08370975B Patent No. 5622851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1237 TTTGGTAAAGATGGCATTTCGCCATGTTGTACAGGCTGGTCTCAAACTCCT 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6402 -- TAGTAGAGATGGGGTTTCACCATGTTGGCCAGGCTGGTCTCAAACTCCT 6450
                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOSTWARE: PATENTIN Release #1.0, V
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/370,975E
FILING DATE: 10-JAN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-370-975B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XXXXXX
                                                                                                                                                                                TELEFAX: (716)263-1600
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 26764 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Maley, Frank
APPLICANT: Maley, Gladys F.
APPLICANT: Weiner, Karen X.B.
                                                                                                                                                                                                                                NAME: Timian, Susan J.
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
TELEPHONE: (716,263-1636
                                                                                                                        MOLECULE TYPE: DNA (genomic) POSITION IN GENOME:
                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human Deoxycytidylate Deaminase NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITITITITITITITGACAGGGTCTCACTCTGTCACCCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITITITITITITGAGACAGAGTCTIGCTCTGTCACCCAGGCTGGAGTGCAGTGGCACA 6285
TITTTTTTTTTTTTTGACAGGGTCTCACTCTGTCACCCAGGCTGGAGTGCAGTGGCACC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGTAGCTGTGATTACAGGCACGTGCCACCACGCCTGGTTAA--TTTTTGTATTTT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCATGGCTCTCTGCAGCCTTGACCTCTGGGAGCTCAAGTGATCCTCCTGCCTCAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTTGGCTCACTGCAGCCTCCAGGTT-TCAAGCGATTCTCCTGCTTCAGCCTC
                                                                                                CHROMOSOME/SEGMENT: 4
nce 26764 BP; 7079 A;
                                                                                                                                                  TOPOLOGY:
                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185;
                                                                                                                                                                                                                                                                                                                                                                                                                                 14603
                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rochester
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clinton
                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nixon, Hargrave, Devans & Doyle inton Square, P.O. Box 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD; DNA; UNC;
                                                             7.0%;
80.1%;
                                                                                                                                                             single
                                                                                              4q35
A; 5521 C;
                                                                                                                                                                                                                                                                                                                                                                  Release #1.0,
                                                                                                                                                                                                                                                                                                                                        US/08/370,975B
                                              Score 99; DB 7; Lei
Pred. No. 7.75e-46;
0; Mismatches 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                 20894/80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                 6539 G; 7625 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26764
                                                                                                                                                                                                                                                                                                                                                                  Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38;
                                                                      Length 26764;
                                                                                                                                                                                                                                                                                                                                                                    #1.25
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                 0 other
                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5;
```

1 1415 100.0 2 1390 98.2 3 836 59.1 4 834 58.9 5 233 16.5 6 231 16.3 7 229 16.2 0 8 114 8.1 0 9 108 7.6 0 11 108 7.6 0 11 108 7.6 0 11 105 7.4 0 15 105 7.4 0 15 105 7.4	nd is derived s query Score Match	. No. is	Database: n-g 1 1 1 1	ost-processing:	Nmatch STD: Dbase	scription: (1- rfect Score: 141 A. Sequence: Comp: TAF	RPON: Wed RPON: Wed Title: >US	Release 2.1 Copyright (Dis	
1415 13 075424 1439 15 092086 838 14 086126 838 24 T39546 2347 24 T39541 2350 14 086127 768 13 075428 2649 6 035034 4359 14 094625 11357 9 051024 24025 21 T17515 24026 21 T17516 24026 21 T17529	by analysis of the SUMMARI SUMMARI	part24 25:part25 9:part29 30:part30 n 9.526; Variance ne number of resul	eq30 2; 2: part2 3: p 2: 8 9: part9 10: 2: 114 15: part15 2: 119 20: part20	mum Match 0%	0; Query 0	15) from 5 1 AGTGGAAA TCACCTTT default	n.a. database search, Mar 25 13~29:04 1998; enerated08-236-918A-7	**************************************	
Human 4-1BB polypepti 0.00e+00 Human receptor induce 0.00e+00 H4-1BB receptor prote 0.00e+00 Human receptor 4-1BB 0.00e+00 Mouse receptor 4-1BB 7.81e-118 4-1BB receptor protei 1.95e-115 Murine 4-1BB polypept 1.95e-115 DNA fragment contg. A 1.34e-47 Brush-1 cDNA. 3.72e-44 Human Figh affinity I 3.72e-44 Human Figh affinity I 3.72e-44 Mutated BRCA1 genomic 1.93e-42	of the result being princore distribution.	27:part27 28:part2 32:part32 33:part3 33:part3 33:part3 dale 1.435	arro art3 4:part4 5:part5 6:part6 7:part7 part10 11:part11 12:part12 13:part13 16:part16 17:part17 18:part18 21:part21 22:part22 23:part23	A CO	4	AGTGATAAAAAAAAAAAAAA 1415 PCACTATTTTTTTTTTTTTT	using Smith-Waterman algorithm MasPar time 175.73 Seconds 929.178 Million cell updates/sec	**************************************	

Query Match 100.0%; Score 1415; DB 13; Length 1415; Best Local Similarity 100.0%; Pred. No. 0.00e+00;

	&2222222228	FT F		R CCCC	0 0000	0 0 0 0 0 0 0 0 0 0 0 0
	Claim The 4- Q75423 the im for ex on T l in vit clonal of act sequen	mat_I /*tag W094; 24-NG 06-MI 07-MI (IMM) Aldel WPI; P-PSI CYtol	Q75424 Q75424 Q8-AUCHUMAN T-cell prolif Homo s Key CDS /*tag- /*tag-			222222211116 22222222222222222222222222
•			fer sap		0000000	105
	e 4 ype sef sef tes tva 1va 15	e 4. 4; U05 3; US- MUNEX MUNEX GO 2265/0 4197 4-1BB 4-1BB	erd; (fi (fi poly hocy s); s			777777777777777777777777777777777777777
	tictic tictic than har har ion P;	898 36. 36. 0RP. 0Win dwin	cDNA rst en peptid te; ac timula Locati 1208 polype	59036 51036 5101	402 402 403 204 248	244026 244026 244026 244026 244026 2440266 2440266
	(rece a pha 4-1E ms of B-L c B-L c f pri f pri 1t ma used	84 RG, RG,	try) e cod tivat tivat tion; on/Qu 87	2 8 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	21 21 24 44 24	18 21 21 21 21 21 21 21 21 21 21 21 21 21
	iglish. ir) and iceutica and 4-1E cell ac be used by T-cel ilso be therape	ith CA; ·L) - bi	NA; 1415 B ing sequen ion; tissu 4-1BB-L; alifiers	3315 7169 7169 6043 4809 2358 3695 6038	1752 3261 1752 1752 1752 1752 1752 1752 1752	T17522 T17521 T17521 T17526 T17526 T17514 T17513 T17513 T17528 T17528 T17522 T17512 T17512 T17512 T17523
	the 4-1BB-L (cytokine, se l composition for stimula B-L polypeptides are also tivation, as they are exp as a tissue culture reag ls during the derivation used to stimulate prolife utic procedures. C; 333 G; 365 T;	nds to cell surface recep	p. ce. e culture; clone; cell li ligand; receptor; cytokin	Tissue plasminogen ac Human deoxycytidylate Human deoxycytidylate Human brain Expressed Human interleukin-12 Natural killer cell s HSA gene. Sequence encoding hum	ted BRCA1 genomic 1, human breast a ted BRCA1 genomic ted BRCA1 genomic ted BRCA1 genomic n brain Expressed mic alpha-GalNac n Cdn-2 DNA. full length sequ	ited BRCA1 genomic lited BRCA1 genomic atted BRCA1 genomic lited BRCA1 genomic sequence atted BRCA1 genomic sted BRCA1 genomic sted BRCA1 genomic lited BRCA1 genomic
	eting useful pressed rent for of pration	gtor	ie; ss.		.93e-4 .93e-4 .93e-4 .93e-4 .18e-4 .18e-4	1.93e-42

Matches

1415;

Mismatches

0

Indels

0;

```
Ş
                                                   δÃ
                                                                                밁
                                                                                                     δõ
                                                                                                                                     В
                                                                                                                                                             ρy
                                                                                                                                                                                            망
                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                           밁
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
  1021
                                                      961
                                                                                 961
                                                                                                             901
                                                                                                                                      901
                                                                                                                                                                   841
                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ш
tgtatatattcaaacaaccatttatgagaccagtacaaactactcaagaggaagatggct
                                                                                                                                                                                                                                                                            cctytyacatatycayycaytytaaayytyttttcayyaccayyaaygaytyttcctcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caagatcattgcaggatccttgtagtaactgcccagctggtacattctgtgataataaca
                                                                                                                                                                                                                                                                                                                                                                                                         agtggaaagttctccggcagccctgagatctcaagagtgacatttgtgagaccagctaat
                                                                                                                                                                                                                                                                                                                                                                                          CTCCAGCCGACCTCTCCCGGGAGCATCCTCTGTGACCCCGCCTGCCCCTGCGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGATGGAAAGTCTGTGTGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              tggatggaaagtctgtgcttgtgaatgggacgaaggaggagggacgtggtctgtggaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTTGGGACATTTAACGATCAGAAACGTGGCATCTGTCGACCCTGGACAAACTGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tgggaaacagctgttacaacatagtagccactctgttgctggtcctcaactttgagagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATTAAAATTCTCTTGGAATCAGCTTTGCTAGTATCATACCTGTGCCAGATTTCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ttgattaaaattctctttggaatcagctttgctagtatcatacctgtgccagatttcatca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGAAAGTTCTCCGGCAGCCCTGAGATCTCAAGAGTGACATTTGTGAGACCAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
  1080
                           1080
                                                                                 1020
                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                             960
                                                                                                                                      960
                                                                                                                                                                                            900
                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                         660
                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                               RESULT OF PRICE OF STATE OF ST
                                  δÃ
                                                                  뭕
                                                                                    δÃ
                                                                                                                     밁
                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
              멂
                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q92086;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                            lymphocytes.
1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; R74087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CA2108401-A.
              201
                                                                                             61
                                                                                                                                                                             21
                                                                                                                                                   ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
```

```
Query Match
Best Local Similarity
Matches 1408; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAR-1995.
14-OCT-1993; 108401.
27-SEP-1993; US-127693.
(REGC ) UNIV CALIFORNIA.
LOTZ M. SCHWATZ H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human receptor induced by lIA; receptor inducible by antiinflammatory; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 52; Page bi; Jake, Purchassion of In This DNA may be expressed recombinantly for the production of In the cDNA was isolated from a library constructed from activated the cDNA was isolated from a library constructed from activated the cDNA was isolated from a library constructed from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pathology.
Claim 52; Page 61; 91pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New receptor inducible by lymphocyte activation - used prods. for the diagnosis and treatment of inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lotz M, Schwarz H, WPI; 95-194420/26.
caagatcattgcaggatccttgtagtaactgcccagctggtacattctgtgataataaca
                                                                                                                                                                                                                           tgggaaacagctgttacaacatagtagccactctgttgctggtcctcaactttgagagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tgttgtacaggctggtctcaaaactcctaggttcacttttggcctcccaaagtgctgggatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGGAAACAGCTGTTACAACATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAGGACAGAGCTGGTGATAAAAAAAAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTGTACAGGCTGGTCTCAAACTCCTAGGTTCACTTTGGCCTCCCAAAGTGCTGGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGGCCACCACCTGACTAACTTTTTTTTTTTTTTTTTGTTTTGGTAAAGATGGCATTTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T-lymphocyte leukemia virus type-1 transformed human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98.2%;
larity 99.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers 140..904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lymphocyte activtion (ILA) DNA. y lymphocyte activation; disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1390; DB 15;
Pred. No. 0.00e+00;
0; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1439;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to develop
host defence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                   180
                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
```

```
В
                                                                                                                                  1081
                                                                                                                                                                           1021
                                            1200
                                                                 1221
                                                                                                            1161
                       1280
                                                                                                                                                                                                1041
  1260
                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                         801
                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                          981
                                                                                                                                                                                                                                                                                    921
                                                                                                                                                                                                                                                                                                          841
                                                                                                                                                                                                                                                                                                                               861
                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                               681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                              gtctcactctgtcacccaggctggagtgcagtggcaccaccatggctctctgcagccttg
                                                                                                                                                                                                                                                             agggctgttgggactttcttgaaaagaagcaaggaaatatgagtcatccgctatcacagc
atgitgtacaggctggtctcaaactcctaggttcactttggcctcccaaagtgctgggat
                                                                                   caggacactctccgcagatcatctccttctttcttgcgctgacgtcgactgcgttgctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tggatggaaagtctgtgcttgtgaatgggacgaaggagagggacgtggtctgtggaccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | gotttgggacatttaacgatcagaaacgtggcatctgtcgaccctggacaaactgttctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tttcaaaagcaagaacaccatcctacataatacccaggattccccccaacacacgttcttt
                                                                                                                                                                                                                                                                                                                   gtagctgccgatttccagaagaagaagaaggaggatgtgaactgtgaaatggaagtcaat
                                                                                                                                                                                                                                                                                                                                                               tgtatatattcaaaccaccatttatgagaccagtacaaactactcaagaggaagatggct
                                                                                                                                                                                                                                                                                                                                                                                               CAGGACACTCTCCGCAGATCATCTCCTTCTTTCTTGCGCTGACGTCGACTGCGTTGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCCCTGCGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctccagccgacctctctccgggagcatcctctgtgacgccgcctgcccctgcgagagagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTTTGGGACATTTAACGATCAGAAACGTGGCATCTGTCGACCCTGGACAAACTGTTCTT
                                            AAGGGCCACCACACCTGACTAACTTTTTTGTTTTTGTTTTGGTAAAGATGGCATTTCGCC
                                                                                                                                                                                                                                                                                                        GTAGCTGCCGATTTCCAGAAGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                    TGTATATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAGAGGAAGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACA
                                                                                                                                                                                               1100
                     1339
                                                                1279
                                                                                     1199
                                                                                                                               1140
                                                                                                                                                     1160
                                                                                                                                                                          1080
                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                         1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
                                                                                                                                                                                                                                                                                    980
                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                               920
                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                        860
                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                   800
                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                              740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
```

B Š 멼 δÃ Q

δ 밁

밁

밁

δÃ 밁 δõ 밁 δÃ 뭥 δÃ 밁 Š

δÃ

Ş 밁 Š 닭 δÃ В Ş

B

δÃ

망

밁 ş 밁 S V

밁

```
RESULT IN RESULT OF THE PROPERTY OF THE PROPER
    멂
                             QΥ
                                                                            В
                                                                                                            δÃ
                                                                                                                                                            밁
                                                                                                                                                                                         γQ
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                     đ
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel cDNA encoding human receptor protein H4-IBB - useful to produce the protein which is used to treat auto:immune disease and facilitate organ transplantation Claim 2; Fig.2; 36pp; English.

Human peripheral blood lymphocyte-derived cDNA was amplified busing probes based on the mouse receptor protein 4-IBB gene. product was used to screen a cDNA ilbrary of activated human The isolated cDNA (Q86126), deposited as NRRL B21131, encoded human homolog, H4-IBB (R70977), of 4-IBB.

Sequence 838 BP; 218 A; 191 C; 215 G; 214 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H4-1BB receptor protein cDNA.
H4-1BB; receptor protein; immunosuppressive; organ transplantation; cell membrane ligand;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q86126;
Q86126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
W09507984-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 95-131352/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-1995.
15-SEP-1994; U10457.
16-SEP-1993; US-122796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kwon BS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ( VUNI)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-OCT-1995 (first entry)
                                                                                                                                                                                                                                           241
                                         440
                                                                                                                                                              301
                                                                                                                                                                                                     320
                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                              140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \vdash
                                                                                                                                                                                               ctgtcctccaaatagtttctccagcgcaggtggacaaaggacctgtgacatatgcaggca
                                                                                                                                                                                                                                                                                                                                                           acaaggtcaagaactgacaaaaaaaggttgtaaagactgttgctttgggacatttaacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgcactccagggtttcactgcctgggggcaggatgcagcatgtgtgaacaggattgtaa
CTGCACTCCAGGGTTTCACTGCCTGGGGGCAGGATGCAGCATGTGTGAACAGGATTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAGGTCAAGAACTGACAAAAAAAGGTTGTAAAGACTGTTGCTTTGGGACATTTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ch 59.1%;
1 Similarity 99.9%;
837; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R70977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDIANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers 41..808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 836; DB 14;
Pred. No. 0.00e+00;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        autoimmune ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 838;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T-cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCR
                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1399
  480
                                       499
                                                                            420
                                                                                                                      439
                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                   379
                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                  319
                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
PF 22-MAR-1996; U03965.

PF 22-MAR-1996; U03965.

PR 23-MAR-1995; US-409851.

PA (INDV ) UNIV INDIANA FOUND.

PI Kang C, Kwon BS;

PH (PSDB; W04174.)

P-PSDB; W04174.

P-PSDB; W04174.

P-PSDB; W04174.

P-SDB; W04174.

P-SDB; W04174.

P-SDB; W04174.

P-SDB; W04174.

P-SDB; W04174.

P-SDB; W04174.

CC A CDNA clone (T39546) codes for novel human receptor protein compared in the first specific ligand binding for treating protein compared in the compared in the potential to function as compared in the compared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT RESULT ACCORDS TO THE PROPERTY OF THE P
                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
   Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T39546 standard;
T39546;
12-DEC-1996 (fir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mat_peptide
/*tag= b
W09629348-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human receptor H4-1BB cDNA.

Receptor 4-1BB; H4-1BB; monoclonal antibody; T-lymphocyte; immunostimulant; cancer; autoimmune disease; graft rejections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                  Local
                                                               Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gctccgtttctctgttgttaaacggggcagaaagaaactcctgtatatattcaaacaacc 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gggagcatcctctgtgaccccgcctgcccttgcgagagagccaggacactctccgcagat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgtgaatgggacgaaggagagggacgtggtctgtgggaccatctccagctgacctctctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAATAGGGCTGTTGGGACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agaagaagaaggatgtgaactgtgaaatggaagtcaatagggctgttgggacttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAGCATCCTCTGTGACCCCCCCCCCCCCCCGCGAGAGAGCCCAGGACACTCTCCGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGACCATCTCCAGCCGACCTCTCTCC
   836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SS
   58.9%;
llarity 99.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers 41..808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA;
Score
Pred.
0; M
   Mismatches
                               834;
No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                               DB 24;
.00e+00;
   ?
                                                            Length
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T-cell;
   0;
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    559
   0,
```

```
δÃ.
                                                             밁
                                                                               δÃ
                                                                                                      멍
                                                                                                                          δÃ
                                                                                                                                                                                          밁
                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
Š
                    밁
                                                                                                                                                밁
                                                                                                                                                                 5
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                  740
  960
                                          800
                                                                                                                                                 601
                                                                                                                                                                      620
                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                  440
                                                                                                                                                                                                                                                                                                                                          380
                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                     320
                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                    781
                                                                                                                                                                                                                560
                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                        500
                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               140
                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                        ctgcactccagggtttcactgcctgggggcaggatgcagcatgtgtgaacaggattgtaa
            agaagaagaaggaggatgtgaactgtgaaatggaagtcaatagggctgtttgggacttt
                                                                                             gggagcatcctctgtgaccccgcctgcccctgcgagagagccaggacactctccgcagat
                                                                                                                                                                                                                           tgtgaatgggacgaaggaggagggacgtggtctgtgggaccatctccagctgacctctctcc
                                                                                                                                                                                                                                                                   acaaggtcaagaactgacaaaaaaaggttgtaaagactgttgctttgggacattttaacga
                                                                                                                                                                                                                                                                                                                                                                                                gtgtaaaggtgttttcaggaccaggaaggagtgttcctccaccagcaatgcagagtgtgtga
                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGGACCTGTGACATATGCAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgtcctccaaatagtttctccagcgcaggtggacaaaggacctgtgacatatgcaggca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ttgtagtaactgcccagctggtacattctgtgataataacaggaatcagatttgcagtcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         catagtagccactctgttgctggtcctcaactttgagaggacaagatcattgcaggatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGAAGAAGGAGGATGTGAACTGTGAAATGGAAGTCAATAGGGCTGTTGGGACTTT
                                                                                    GCTCCGTTTCTCTGTTAAACGGGGCAGAAAGAAACTCCTGTATATATTCAAACAACC
                                                                                                                            CATCTCCTTCTTGCGCTGACGTCGACTGCGTTGCTTCCTGCTGCTTCCTCAC
                                                                                                                                                                      GGGAGCATCCTCTGTGACCCCGCCTGCCCCTGCGAGAGAGCCAGGACACTCTCCGCAGAT
                                                                                                                                                                                                                TGTGAATGGGACGAAGGAAGGGACGTGGTCTGTGGACCATCTCCAGCCGACCTCTCTCC
                                                                                                                                                                                                                                                                                                 ACAAGGTCAAGAACTGACAAAAAAAGGTTGTAAAGACTGTTGCTTTGGGACATTTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGTAGTAACTGCCCAGCTGGTACATTCTGTGATAATAACAGGAATCAGATTTGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATAGTAGCCACTCTGTTGCTGGTCCTCAACTTTGAGAGGACAAGATCATTGCAGGATCC
                      838
  917
                                          859
                                                              780
                                                                                                                                                 660
                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                  499
                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                     379
                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                    799
                                                                                                       720
                                                                                                                             739
                                                                                                                                                                      679
                                                                                                                                                                                                                619
                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                        559
                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                              319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
```

```
PET COMPETED FOR THE SOLUTION AND THE SO
mat_peptide 146.
/*tag= b
W0962948-A1.
26-SEP-1996.
22-MAR-1996; U03965.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T39541
T39541;
                                                                                                                                                                                                                                                                                                                                                                    therapy;
Mus sp.
Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-DEC-1996 (first entry)
Mouse receptor 4-1BB cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Receptor
                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunostimulant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                      ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4-1BB; H4-1BB; monoclonal antibody;
imulant; cancer; autoimmune disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                146..913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to mRNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T-lymphocyte; T-
graft rejection;
```

밁

aatcagctttgctagtatcatacctgtgccagatttcatcatgggaaacagctgttacaa

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                     밁
                                                                                                             ΩV
                                                                                                                                         당
                                                                                                                                                                       δÃ
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                  밇
                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
Š
                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity Matches 530; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                auto:immune diseases
auto:immune diseases
Disclosure; Page 32-34; 48pp; English
A cDNA clone (T39541) codes for novel murine receptor protein 4-1BB (W04173), a protein that has the potential to function and an accessory signaling molecule during T-cell activation and realified by primers (see also T3954)

**The cDNA clone was isolated and identified by Primers (see also T3954)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         specific expression of T-cell genes. Primers (see also T39542-45) based on the murine 4-1BB cDNA were utilised in the identification of the gene (see also T39546) for the human homologue H4-1BB (W04174), a protein used to raise a monoclonal antibody useful in cancer and autoimmune disease therapy.

Sequence 2347 BP; 590 A; 570 C; 580 G; 607 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Monoclonal antibody specific for human receptor protein 4-1BB - used to enhance proliferation and activation of T-cells for treatment of cancer and to inhibit specific ligand binding for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kang C, Kwon BS;
WPI; 96-443138/44.
P-PSDB; W04173.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VGNI)
                                                                                                                                                                              589
                                                                                                                                                                                                                                                                                                472
                                                                                                                                                                                                                                                                                                                            495
                                                                                                                                                                                                                                                                                                                                                         412
                                                                                                                                                                                                                                                                                                                                                                                      435
                                                                                                                                                                                                                                                                                                                                                                                                                                                375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                    649
                                                                                                                                                 672
                                                                                                                                                                                                                                        529
                                                                                                                                                                                                                                                                  555
                                                                                                                                                                                                                                                                                                                                                                                                                   352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112
                                                          709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
   769
                                                                                                                                                                                                                                                                                                              aaacctgtagcttgggaacatttaatgaccagaacggtactggcgtctgtcgaccctgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agggaggaccaggagggcactccttgcaggtccttaccttgttcctggcgctgacatcgg
                                                                                                                                                                                                                                                                                                                                                         agtgcaccagatgtgaaaaggactgcaggcctggccaggagctaacgaagcagggttgca
                                                                                                                  tgtgtggaccccctgtggtgagcttctctccc--agta-ccaccatttctgtgactccag
                                                                                                                                                                                                                                                    cgaactgctctctagacggaaggtctgtgcttaagaccgggaccacgggagaaggacgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                  gctcctctacccacacgcggagtgtgagtgcattgaaggattccattgcttggggccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agaa-aatacaatccag-tctgcaagagctgccctccaagtaccttctccagcataggtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtgagaaggtgggagccgtgcagaactcctgtgataactgtcagcctggtactttctgc-
                   ggaaaaaattcccccacatattcaagcaaccatttaagaagaccactggagcagctcaag
                                                                                                                                                                            TCTGTGGACCATCTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCC
                                                                                                                                                                                                                                     CAAACTGTTCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGG
                                                                                                                                                                                                                                                                                                AAGACTGTTGCGTTTGGGACATTTAACGATCAGAAACGT---
                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAG
    GAAAGAAACTCCTGTATATTCAAACAACCATTTATGAGACCAGTACAAACTACTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ) UNIV INDIANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16.5%;
llarity 69.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-409851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 233; DB 24; Le
Pred. No. 7.81e-118;
0; Mismatches 225;
                                                                                                                                                                                                                                                                                               -GGCATCTGTCGACCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 2347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             as
    828
                              848
                                                          768
                                                                                       788
                                                                                                                                               731
                                                                                                                                                                              648
                                                                                                                                                                                                        671
                                                                                                                                                                                                                                                                  614
                                                                                                                                                                                                                                                                                               528
                                                                                                                                                                                                                                                                                                                                                                                      494
                                                                                                                                                                                                                                                                                                                                                                                                                   411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     291
                                                                                                                                                                                                                                      588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
```

```
NESULATION OF THE PRINCE OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                        δÃ
                                                                                              B
                                                                                                                                          Q
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LT 6
Q86127 9
Q86127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel CDNA encoding human receptor protein H4-1BB - useful to produce the protein which is used to treat auto:immune disease and facilitate organ transplantation
Disclosure; Fig.1; 36pp; English.
PCR primers based on the mouse receptor protein 4-1BB gene, given 286127, were used to probe a cDNA library of activated human To isolate the homologous human gene, H4-1BB (086126).
Sequence 2350 BP; 590 A; 559 C; 591 G; 607 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4-1BB; receptor protein; immunosuppressive; autoimmune organ transplantation; cell membrane ligand; ss. Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kwon BS;
WPI; 95-131352/17.
P-PSDB; R70978.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
/*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4-1BB receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-SEP-1994; U10457.
16-SEP-1993; US-122796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9507984-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "bases n at
identified in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-0CT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (INDV ) UNIV INDIANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product- 4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     849
                                                                                                                                                                                                                                                                                                                                                 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                172 TIGAGAGGACAAGATCATTGCAGGATCCTTGTAGTAACTGCCCAGCTGGTACATTCTGTG
aaacctgtagcttgggaacatttaatgaccagaacggtactggggtctgtcgaccctgga
                                                agtgcaccagatgtgaaaaggactgcaggcctggccaggagctaacgaagcagggttgca
                                                                                                                                                                             gctcctctacccacaacgcggagtgtgagtgcattgaaggattccattgcttggggccac
                                                                                                                                                                                                                                                                            gacagoogaaotgtaacatotgoagagtgtgtgtgoaggctatttcaggttcaagaagtttt
                                                                                                                                                                                                                                                                                                                                                 ATAATAACAGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                             agaa-aatacaatccag-tctgcaagagctgccctccaagtaccttctccagcataggtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtgagaaggtgggagccgtgcagaactcctgtgataactgtcagcctggtactttctgc-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAAGATGGCTGTAGCTGCCGATTTCCAGAAGAAGAAGAAGAAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aggaagatgcttgtagctgccgatgtccacaggaagaagaagaaggagga
                                                                                                                                                 GTTCCTCCACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGCAG
                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       at positions 1253-1255 he specification" 1303..1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor protein 1253..1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215..913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146..214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 146..916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cdna;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 231; DB 14; Pred. No. 1.24e-116; O; Mismatches 226;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 given in
n T-cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                   494
     554
                                                   471
                                                                                                                                                                                                                                                                                                                                                                                                                                                231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 171
                                                                                                                                                    411
                                                                                                                                                                                                  434
                                                                                                                                                                                                                                                  351
                                                                                                                                                                                                                                                                                                374
                                                                                                                                                                                                                                                                                                                                                 291
                                                                                                                                                                                                                                                                                                                                                                                                  314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
```

œ

```
유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
Ş
                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                              Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                             06-MAY-1994; U05036.
07-MAY-1993; US-060843.
(IMAY) IMMUNEX CORP.
Alderson MR, Goodwin RG,
WPI, 95-022265/03.
                                                                                              Cytokine, 4-1BB ligand (4-1BB-L) - binds to cell surface receptor 4-1BB to transduce signal

Example 1; Page 43-44; 65pp; English.

The 4-1BB polypeptide (receptor) and the 4-1BB-L (cytokine, see 075422) are useful in a pharmaceutical composition for stimulating the immune system. The 4-1BB and 4-1BB-L polypeptides are also useful for exploring mechanisms of T-cell activation, as they are expressed on T lymphocytes. 4-1BB-L can be used as a tissue culture reagent for in vitro cultivation of primary T-cells during the derivation of clonal T-cells lines. It may also be used to stimulate proliferation of activated T-cells, used in therapeutic procedures.

Sequence 768 BP; 188 A; 186 C; 217 G; 177 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Murine 4-1BB polypeptide coding sequence.
T-cell; lymphocyte; activation; tissue culture; clone; proliferation; stimulation; 4-1BB-L; ligand; receptor; Mus musculus.
                                                                                                                                                                                                                                                  WPI; 95-022265/03.
P-PSDB; R64199.
                                                                                                                                                                                                                                                                                                                                                                                       /product= 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q75428;
08-AUG-1995
                                                                                                                                                                                                                                                                                                                                          W09426290-A.
                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q75428 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    529
 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          732
               atgggaaacaactgttacaacgtggtggtcattgtgctgctgctagtgggctgttgagaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agggaggaccaggagggcactccttgcaggtccttaccttgttcctggcgctgacatcgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cgaactgctctctagacggaaggtctgtgcttaagaccgggaccacggagaaggacgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aggaagatgcttgtagctgccgatgtccacaggaagaagaaggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCGTTGCTCCTGCTGTTCTTCCTCACGCTCCGTTTCTCTGTTGATAAACGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctttgctgctgg-cc--ctgatcttcatttactctctgtttctctgtgctcaaatggatca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGTGGACCATCTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgtgtggaccccctgtggtgagcttctctccc--agta-ccaccatttctgtgactccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAACTGTTCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGACGTGG
AGGAAGATGGCTGTAGCTGCCGATTTCCAGAAGAAGAAGAAGAAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
524; Conser
                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                       4-1BB
                                              16.2%;
larity 69.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                          polypeptide
1..69
                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 1..768
                                                                                                                                                                                                                                                                                                                                                                 70..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA;
                                                                                                                                                                                                                                                                            Smith
                                              Score 229; I
Pred. No. 1.9
0; Mismatcl
                                                                                                                                                                                                                                                                            CA;
                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                DB 13; L
.95e-115;
ches 223;
                                                                      Length 768;
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell lines;
                                                 12;
                                                 Gaps
 179
                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           731
                                                 8
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                           멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
 Š
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                     뭕
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                          Q35034 :
Q35034;
                                                                           exon
/*tag=
/note=
                                       exon
                                                                                                                                                                   27-MAy-1993 (first entry)
DNA fragment contg. ACE gene intron 16.
Angiotensin converting enzyme; polymorphism; detection; vasoactive peptide metabolism; disease; hypertension; di
/note=
intron
/*tag=
                                               /*tag=
/note=
                                                                                                                   intron
/*tag=
                                                                                                                                         Key
                                                                                                                                                         atherosclerosis; granulomatous;
                                                                                                                                                 Homo sapiens
                                                                    intron
                                                                                                            /note=
                                                                                                                                                                                                                                                             837
                             /*tag=
                                                                                                                                                                                                                                                                                712
                                                                                                                                                                                                                                                                                                                                           717
                                                                                                                                                                                                                                                                                                                                                               595
                                                                                                                                                                                                                                                                                                                                                                                  657
                                                                                                                                                                                                                                                                                                                                                                                                                         597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                        gcttgtagctgccgatgtccacaggaagaagaaggagga
                                                                                                                                                                                                                                                                                                   CTCCTGTATATATTCAAACCAACCATTTATGAGACCAGTACAAACTACTCAAGAGGAAGAT
                                                                                                                                                                                                                                                                                                                     ttcccccacatattcaagcaaccatttaagaagaccactggagcagctcaagaggaagat
                                                                                                                                                                                                                                                                                                                                         ccaggagggcactccttgcaggtccttaccttgttcctggcgctgacatcggctttgctg
                                                                                                                                                                                                                                                                                                                                                                                                                                    ccccctgtggtgagcttctctccc--agta-ccaccatttctgtgactccagagggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTTTGGGACATTTAACGATCAGAAACGT---GGCATCTGTCGACCCTGGACAAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agcttgggaacatttaatgaccagaacggtactggcgtctgtcgaccctggacgaactgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agatgtgaaaaggactgcaggcctggccaggagctaacgaagcagggttgcaaaacctgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCAGCAATGCAGAGTGTGACTGCACTCCAGGGTTTCACTGCCTGGGGGGCAGGATGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acccacaacgcggagtgtgagtgcattgaaggattccattgcttgggggccacagtgcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aactgtaacatctgcagagtgtgtgcaggctatttcaggttcaagaagtttttgctcctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAATCAGATTTGCAGTCCCTGTCCTCCAAATAGTTTCTCCAGCGCAGGTGGACAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acaatccag-tctgcaagagctgccctccaagtaccttctccagcataggtggacagccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        œ
                                                                                                                                                                                                                                                             GGCTGTAGCTGCCGATTTCCAGAAGAAGAAGAAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                  GAGCCAGGACACTCTCCGCAGATCATCTCCTTCTTTCTTGCGCTGACGTCGACTGCGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                        CCATCTCCAGCCGACCTCTCTCCGGGAGCATCCTCTGTGACCCCGCCTGCCCCTGCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTTTGGATGGAAAGTCTGTGCTTGTGAATGGGACGAAGGAGGGACGTGGTCTGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            c intron
                                                                                                                                                                                                                     standard; DNA;
                                                                                                            "end
                  "exon
                                                                             "exon
 o
                             Q.
                                                                                        Ф
                                                                                                            얁
                    17"
                                                                             16#
                                                                                                 83..170
                                       16"
2027...
                                                                                                                                        Location/Qualifiers
         2171..2649
                                                                                                                                                                                                                      2649
                                                                                                                                                                                                                      ₽P
                                                                                                                                                         gusease; hypertension;
sugar diabetes complic
                                                                                                                                                                                                                                                              875
                                                                                                                                                                                                                                                                                750
                                                                                                                                                                      diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                   836
                                                                                                                                                                                                                                                                                                                                                              651
                                                                                                                                                                                                                                                                                                                                                                                                     594
                                                                                                                                                                                                                                                                                                                                                                                                                                                               596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      419
                                                                                                                                                                                                                                                                                                                                                                                  716
                                                                                                                                                                                                                                                                                                                                                                                                                         656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
```

```
RESULT RESULT ACCORDS BEING CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R8888
                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                       ပ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCCPPTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 21
                                                                                                                                                                                                                                                        Q94625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of polymorphism in the angiotensin-I converting enzyme gene - using new DNA sequences, for diagnosing atherosclerosis, granuloma-associated diseases and diabetic complications Claim 1; Fig 2; 22pp; French.

The sequence is that of a DNA fragment contg. intron 16 of the gene for angiotensin-I converting enzyme (ACE). Primers based on part of the sequence of the intron can be used to detect polymorphism in the ACE gene, esp. by hybridisation or amplification (partic. PCR), and to detect the presence/absence of a defined insertion (i.e. nucleotides 1451-1738 of the intron sequence). This can be used to study the impact of polymorphism on diseases, metabolism of vasoactive peptides and mechanisms of hypertension. In particular it can be used in diagnosis of atherosclerosis, granulomatous diseases and the complications of
                                                            08-JUN-1995.
30-NOV-1994; U13823.
30-NOV-1993; US-160088.
27-SEP-1994; US-314598.
(CALP-) CALIFORNIA PACIFIC MEDICAL CENT Chang J, Schott DR, Smith HS; WPI; 95-21528/28.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1182
                                                                                                                                                                                                                                                                                                                 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (INRM ) INSERM INST NAT SANTE & RECH MED
Corvol P, Hubert C, Soubrier F.
WPI; 93-036331/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "repetitive Alu-type insertion sequence" W09300360-A.
                                       New cDNA sequences from the Brush-1 as probes for detecting tumours and
                                                                                                                                                              Homo sapiens.
W09515334-A.
                                                                                                                                                                                                                    Brush-1 cDNA
                                                                                                                                                                                                                                Q94625;
20-NOV-1995
              breast, and therapeutically Claim 2; Page 25-29; 39pp; 1
                                                                                                                                                                                         diagnosis;
                                                                                                                                                                                                      Brush-1; tumor suppressor
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sugar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-JUN-1992; F00574.
27-JUN-1991; FR-008020.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note- "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ttagctgggcgtggtagatgcctgtagtcccagctacttgggaggctgaggc-atga 1240
                                                                                                                                                                                                                                                                                                            atggaaggattgcttgagc-ctgggaggtcaaggctgcagtgagccgagatggcgccact
                                                                                                                                                                                                                                                                                                                                                                                                                                       aaaaaa-ttagttggatgtggtggatgcctgtagtcctagctgctgctagggaggctgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGGCCGGGCCIGGCAGTICATGTCTGTAATCCCAGCACTTTGGGAGGCCAAAGTGAACC
                                                                                                                                                                                                                                                                                                                                                                   GCAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACT
                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             diabetes.
nce 2649
                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                         gene
                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP;
                                                                                                                                                                                      therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1621..1908
                                                                                                                                                                                                                                                        CDNA to mRNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.1%;
            39pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            580
                                                                                                                                                                                         SS
                                                                                                                                                                                                    gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ą
              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 114; DB 6;
Pred. No. 1.34e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                      breast cancer; mamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          761 C;
RNA was
                                     tumour suppressor gene
pre:malignant cells, es
                                                                                                                                                                                                                                                           ВP
                                                                                            RES
subjected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          733 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2649;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
ξ
                                                                                                                                                                                                      carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          575 T;
PCR using
                                       esp.
                                       sp. of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                             1417
                                                                                                                                                                                                                                                                                                                                                                   1110
                                                                                                                                                                                                                                                                                                                                                                                                                         1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1289
```

```
င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        င္မ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              នននននេង
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                   TE 10
TE6756 standa
TE6756;
12-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence. Isolated controlled and be used to detect this marker in a sequence that can be used to be used for gene therapy in a Brush-1 nucleic acid may also be used for gene therapy in a subject deficient in a functional Brush-1 gene.

Sequence 4359 BP; 1173 A; 861 C; 952 G; 1373 Sequence 4359 BP; 1173 A; 861 C; 952 G; 1373
                                                                                                                                                                                                                                                                                                                                                                                         Human high affinity IgE receptor beta chain E237G variant gene. human; immunoglobilin E; high affinity receptor; beta subunit; Fc epsilon RI beta; exon 7; variant; E237G; atopy; atopic asthm detection; diagnosis; polymorphism; subgroup; clinical manageme
                                                 intron
/*tag= j
/number= 5
                                                                                                                                                                                                                                         intron
/*tag= d
/number=
                                                                                                                                                                                                                                                                                               exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primers homologous to regions of the tumor suppressor gene Brush-1 sequence. Isolated clones were used to assemble a Brush-1 cDNA sequence that can be used to detect this marker in breast tissue.
/*tag= k
/number= 6
intron
/*tag= l
                                          exon
                                                                                                      exon
                                                                                                                           intron
/*tag= h
                                                                                                                                                                    exon
                                                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  intron
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                   exon
                                                                                    /number=
                                                                                                                 /number=
                                                                                                                                                /number=
                                                                                                                                                                              /number=
                                                                                                                                                                                                              /number=
                                                                                                                                                                                                                                                                         /number=
                                                                                                                                                                                                                                                                                                          /number= 1
                                                                                                                                                                                                                                                                                                                                         /number=
                                                                                            /*tag=
                                                                                                                                                            /*tag=
                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ttgcttgagc-ccaggaggtcgaggctgcagtgagccatgatcgtaacactgcactccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gataccatcttgggcaacattgcaagactctatctctacaaaaaagaaaatacaaaattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGCAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aaccgtgcatggtggcgtgcgccggtggttccagctactcaggaggctgaggtgggagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGCACTCCAG
                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                     ρ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . Similarity
170; Conser
                                                                                                                                                         g
                                                                                                                                                                                                                        æ
                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
            5739..7223
                                                                         5238..5639
                                                                                                                                      4532..5078
                                                                                                                                                                                                   2161..4474
                                                                                                                                                                                                                                                                                                                              512..1380
                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 354..511
                                          5640..5738
                                                                                                      5079..5237
                                                                                                                                                                    4475..4531
                                                                                                                                                                                                                                  2026..2160
                                                                                                                                                                                                                                                                                               1381..1510
                                                                                                                                                                                                                                                                 1511..2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA; 11298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7.68;
76.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 108; DB 14;
Pred. No. 3.72e-44;
0; Mismatches 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 4359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1373 T;
                                                                                                                                                                                                                                                                                                                                                                                                     asthma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                               IgE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              489
                                                                                                                                                                                                                                                                                                                                                                                          SS
```

```
RESULT
RE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 7.6%;
Best Local Similarity 75.7%;
Matches 174; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-MAR-1997.
29-AUG-1996; G2095.
29-AUG-1995; GB-017585.
(ISIS-) ISIS INNOVATIONS L
COOKSON WOC, Hill MR;
WPI; 97-179293/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page -; 25pp; English.

Disclosure; Page -; 25pp; English.

This DNA encodes human immunoglobulin E (IgE) high affinity receptor bet subunit (Fc epsilon RI beta ) exon 7 variant E237G. This variant is associated with atopy and atopic asthma. The variation is in exon 7 and is a nucleotide change from adenine to guanine at nucleotide 7297 (nucleotide 6843 in the Fc epsilon RI beta gene sequence of Kuster, et al. 1992). Detection of the protein is useful for diagnosis of atopy. Ir particular the E273G polymorphism may also define a subgroup of asthma suffers with a particular clinical course, in which case recognition of the variant/polymorphism would be of value in defining asthma prognosis
                                                                                                                                             W09321317-A.
28-OCT-1993,
16-APR-1993, U03419.
16-APR-1992, US-869933.
(USSH) US DEPT HEALTH &
                                                                                                                        (USSH ) U
Kinet JP;
                                                                                                                                                                                                                                                                                                                                                                                              LT 11
Q51024 standard;
Q51024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and manag
NB. This
Sequence
                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8339 agtagtitgagaccagcctggccaacatagtgaaaccccgtctctactaaaaaatacaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diagnosing atopy, or predisposition to it - l immunoglobulin E high affinity receptor beta Glu237Gly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IgE; immunoglogulin E receptor; be
aggregation; signal transduction;
                                                                                                                                                                                                                                                                                                                                                  Human FCERI beta chain gene.
                                                                          Immunoglobulin E receptor human
                                                                                                                                                                                                                                                                                                                                                                            21-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; W29149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9708338-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= n
/note= "nucleotide change from wild type adenine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag=
                       strand reverse tran
a polymerase chain
                                                                                            93-351727/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caggagaatcgcttgaac-ctgggaggcggaggttgcagtgagccgagatcgcaccagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             m
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence was
11298 BP;
                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7224..10214
                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                 eceptor human beta sub-unit isolation transcripts from human basophils as the reaction, used to treat and diagrams.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         created using the sequence given in 3469 A; 2113 C; 2284 G;
                                                                                                                                                                                                                                                                                                                                                                                                                            11357
                                                                                                                                                  δυ
                                                                                                                                                  HUMAN SERVICE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTD
                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 108; DB 33; Pred. No. 3.72e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                               beta subunit; basophils; allergy;
n; diagnosis; antagonist; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           by detection
a subunit exo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 11298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                       diagnose
                                                   as templates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           n Genbank M89796
3415 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              n of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receptor beta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
d
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     င့
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 14; 154pp; English.

The sequence is that of a subunit of the human IgE receptor. The protein can be used to identify human beta subuit FCERI inhibitors (immunoglobulin E receptor) which inhibit the binding of IgE to its receptor and inhibit the aggragation function of the receptor or the signal transducing function related to allergic response. Such inhibitors can be used for the treatment or prevention of allergic disease.

See also q51020-3.
/*tag=
/note=
exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8398
                                                                                                                                                                                                                                                                                                                                       Cancer therapy; breas antibody production;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    8577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1287
                                                         /note=
intron
                                                                                  /*tag= g
/note= "known polymorphic s
/note= "known polymorphic s
                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                II 12
T17515 standard;
T17515;
                                                                                                                                                                                                                                                                                                                                                                                                                                 1227
                            misc_feature
                                                                                                                    misc_feature
                                                                                                                                                   misc
                                                                                                                                                                               /note=
                                                                                                                                                                                                  /*tag=
                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                            Mutated BRCA1
                                                                                                                                                                                                                                                                                                                                                                        04-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                  /note= "indefinite interval within intron misc_feature 2141
                                      /note= "intron
                                                 /*tag=
                                                                              /*tag=
                                                                                                                                                           /note= "intron
                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                      /note-
                                                                                                                                                                                                                                                  /note-
                                                                                                                                                                                                                                                                               /note-
                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agtagtttgagaccagcctggccaacatagtgaaaccccgtctctactaaaaatacaaaa
                                                                                                                                                                                                                                         _feature
                                                                                                                                                                                                                                                                                                                                 therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                            caggagaatcgcttgaac-ctgggaggcggaggttgcagtgagccgagatcgcaccagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aaaaaattagctgggtgtggtggcagtcacctgtagtcccagctacttgggaggatgagg
                                                                                                                                                  feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACTAGG-AGACTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "known polymorphic site"
1513..1611
                                                                                                                                                                                                                                                 "intron
                                                                                                                                                                                                                                                                               "exon
"indefinite interval 2678..2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
174; Conser
                                                                   "exon
                                                                                                                                                                                        "exon
                                                                                                                                                                       ø
                                                                                                                                                                                                                                                             ۵
                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                                                   മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11357
                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                             y; breast and ovarian cancer predisposing gene; uction; germline alteration; probe; lesion neopl protein replacement therapy; protein mimetic; i
                                                                                                                                                                                                                                                                                                                                                            genomic
                                        ω
                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                 enomic sequence from breast and ovarian c
                                                                                                                                                                                                                                          1295
                             2569..2581
                                                                                                                                                  1925..1937
                                                                                                                                                                               1612..2206
                                                                                                                                                                                                                                                                                                   Location/Qualifiers 256..355
                                                          2261..2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B₽;
                                                                                                                                                                                                                                                                                                                                                                                          CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.6%;
75.7%;
                                                                                                                                                                                                                                                                                                                                                                                          24025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3480 A;
                                                                                                 site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 108; DB 9;
Pred. No. 3.72e-44;
0; Mismatches 54
          within
                                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2125
          intron
                                                                                                                                                                                                                                                                                                                                                             PM15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 c;
          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 11357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                                  Sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
```

```
4444444444444444444
                                                                                                                                                                                                        ***************
                                                                      /*tag= ae
/note= "exon
misc_feature
                                                                                                                                                  /note= "intron 8" misc_feature 6
                                                                                                                                                                                                                                                                                                                                       /note= "intron
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= 1
/note= "known polymorphic site"
/nerron 2789..3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                        /*tag= ag
/note= "intron 9"
/note= "arture 9375
                                                                                             /*tag= ad
/note= "site of 1 nucleotide deletion at known
/note= "site of 1 nucleotide deletion at known
polymorphic site"
polymorphic site"
                                                                                                                       /*tag= ac
/note= "known polymorphic site"
/note= "gl06"
                                                                                                                                                                                               /note= "known polymorphic site"
exon 6572..6677
                                                                                                                                                                                                                  /*tag= y
/note= "indefinite interval within intron 7"
misc_feature 6538
                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
/*tag= ah
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                /*tag= aa
/note= "exon
                                                                                                                                                                                                                                        /*tag= x
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                /note= "indefinite interval within intron 6" exon 4225..4364
                                                                                                                                                                                                                                                                                                                                                              /note= "exon
intron
                                                                                                                                                                                                                                                                                                                                                                                     /note- "known polymorphic site"
exon 3814..3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note- "indefinite interval within intron 4" exon 3329..3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note-
                                                note= "intron
nisc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= p
/note= "intron 5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "exon
                                                                                                                                                                                                                                                                                                 note- "exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ∌
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          o
                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                        9206
                                                                                                                                                  6823
                                                                                                                                                                                                                                                                   4391..4392
                                                                                                                                                                                                                                                                                           4365..6571
                                                                                                                                                                                                                                                                                                                                        4076..4088
                                                                                                                                                                                                                                                                                                                                                               3903..4224
                                                                                                                                                                                                                                                                                                                                                                                                                                   3598..3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3407..3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3063..3075
                                                                                                                                                                          6678..9163
```

```
intron 15023.

/*tag= bc
/note= "intron 11"
misc_feature 15283
/*tag= bf
/note= "intron 12"
misc_feature 156
/*tag= bg
                                                                                                                                                 /*tag= az
/note= "known
misc_feature
                                                                                                                                                                                                                                                                                              /*tag= at
/note= "known
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature 11>>>
    /*tag= an
    /*note= "known polymorphic site"
    /note= 12951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= aj
/note= "intron 1
misc_feature
/*tag= ak
                                                                                                                           /*tag= ba
/note= "known
misc_feature
                                                                                                                                                                        /*tag= ay
/note= "known
misc_feature
                                                                                                                                                                                                                                                                       /*tag= au
/note= "known ]
misc_feature
                                                                                                                                                                                                                         misc_feature 14040

*tag= aw

/note= "known polymorphic site"

misc_feature 14045
                               /*tag=
/note=
intron
                                                 /*tag- bd
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                /*tag= bb
/note= "known polymorphic site"
/**ron 15023..15423
                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                          /*tag" ar
/*tag" ar
/note= "known polymorphic site"
/no feature 13237
                                                                                                                                                                                                                                                                                                                                                                  /*tag= aq
/note= "known polymorphic site"
/note= l3047
                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                         /*tag= ap
/note= "known polymorphic site"
/no feature 13008
                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= am
/note= "known polymorphic site"
misc feature 11993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= ak
/note= "indefinite interval within intron 10"
exon 11597..15022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag=
/note=
intron
                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= ao
/note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= al
/note= "exon
                                                                                                                                                                                                          /*tag= ax
/note= "known
                                                                                                                                                                                                                                                        /*tag= av
/note= "known
                                                                                                                                                                                                                                                                                                                                /*tag= as
/note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ai
"exon 10"
                                       12"
                                                                                                                                                                                                                                                                        polymorphic site"
13950
                                                                                                                            polymorphic site"
14965
                                                                                                                                                   polymorphic site"
14890
                                                                                                                                                                           polymorphic site<sup>n</sup>
14873
                                                                                                                                                                                                  polymorphic
14474
                                                                                                                                                                                                                                                 polymorphic site"
14040
                                                                                                                                                                                                                                                                                                polymorphic site"
13538
                                                                                                                                                                                                                                                                                                                      polymorphic site"
13447
                                                                                                                                                                                                                                                                                                                                                                                                                     polymorphic site"
13003
         15646..15658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11383..11395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10607..11596
                               15511..15951
                                                                                                                                                                                                          site"
```

```
RESULT ID T. AC T. AC T. DT O. DE M. KW Ca KW au EH KW 99
                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                 Сþ
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                Сþ
                                                                                                                                                                                                                                                                                                                                                                                밁
      Note: remainder of annotations omitted
                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                  /*tag= d
/note= "exon
intron
                                                                                                                                                                                                                                                                                                   1107
                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                   7583
                                                                                                                                                                                                                                                                                                                                  1167
                                                                                                                                                                                                                                                                                                                                                                 1226
                                                                                                                                                                                                                                                                                                                                                                                 7464
             /note-
                                                     misc_
                                                                           misc_feature
                                                                                                                           exon
                                                                                                                                                misc_feature
                                                                                                                                                                intron
/*tag=
                                                                                                                                                                                                      Key
                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                    Mutated BRCA1 genomic sequence from sample set MSKCC family 19921. Cancer therapy; breast and ovarian cancer predisposing gene; immunogen; antibody production; germilne alteration; probe; leston neoplasia; human gene therapy; protein replacement therapy; protein mimetic; BRCA1; ds.
                                                                                                                                                                                                                                                    07-OCT-1996
                                                                                                                                                                                                                                                                                                                                                 7524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "exon
misc_feature
                                                                                                                                                                                                                                                                    T17455 standard;
      intron
                                                  /note- "indefinite interval within intron nisc_feature 2141
                                                                                                                                 /note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= bk
/note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= bi
/note= "known
                      /*tag=
                                     'note-
                                                                                   note- "intron
                                                                                                                                                         /note= "intron
                                                                                                                                                                               note- "exon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= bj
/note= "intron 13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
                                             *tag=
                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ntron
                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                          AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                                                                                                                                                                                                                                                                                                                                        aaaaaattagccggggtggtggcttatgcctgtaatcccagctactcaggaggctgaggc 7523
                                                                                                                                                                                                                                                                                                   aggagaatcgcttgaac-ccaggaagcagaggttgcagtgagccaagatcgcaccattgc
                                                                                                                                                                                                                                                                                                                                 AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCATGGTGGTGCCACTGC
                                     "known
                                                                                                                                                                                                                                                                                                                                                                                                                              7.4%;
l Similarity 76.1%;
175; Conservative
             "exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "indefinite interval within intron 15952..16125
                       5
                                                                                            æ
                                                                                                                                                                  σ
                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13 п
                                                                                                                                                                                                                                                    (first entry)
                            polymorphic site"
2207..2260
                                                                                                                          polymorphic site"
1513..1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polymorphic site"
16369..16381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polymorphic site"
16126..16564
                                                                                    Ŋ
                                                                                                                                                 1295
                                                                            1925..1937
                                                                                                    1612..2206
                                                                                                                                                                                              Location/Qualifiers 256..355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16242
                                                                                                                                                                        356..1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16076
                                                                                                                                                                                                                                                                    CDNA; 24025 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 105;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21; I
1.93e-42;
tches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 24025;
                                                                                                                                                                                                                                                                                                                  7632
                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                 7582
                                                                                                                                                                                                                                                                                                                                                                 1168
                                                                                                                                                                                                                            human;
                                                                                                                                                                                                                                                                                                                                                                                                                               ω
      /note= "exon s
misc_feature
/*tag= ar
                                                     misc_feature buzs

/*tag= ad

/note= "known polymorphic site"

'-- feature 9106
                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                 exon
                                                                                                                                                         misc_
                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                  mutation
                                                                                                                                                                                                                                                                                                                                                 exon
                                                                                                                                                                                                                                                                                                                                                                        misc_
                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                            /*tag=
/note=
                                                                                                 /*tag=
                                                                                                                /*tag=
/note=
                                                                                                                                               /*tag=
                                                                                                                                                                              misc_feature
                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                             intron
                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                          /*tag= t
/note= "intron
                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                  /*tag= q
/note= "indefinite interval within intron
misc feature 3653
                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag=
                                                                                                                                                       /note= "indefinite interval within intron
misc_feature 6538
                                                                                                                                                                                      /*tag= y
/note= "known
                                                                                                                                                                                                            /note- "intron
                                                                                                                                                                                                                                                   /note- "indefinite interval within intron exon 4225..4364
                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                 /note= "known polymorphic site"
exon 3814..3902
                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= p
/note= "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "indefinite interval axon 3329..3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note- "known polymorphic site"
intron 2789..3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "indefinite interval within intron 2678..2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= i
/note= "intron
                                                                                           'note≖ "intron
                                                                                                          ntron
                                                                                                                                        /note= "known
                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                   note- "site
                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note- "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note- "exon
                                                                                                                                                                       *tag=
                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                          .ntron
                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                          s exon
                                           "known
                                                                                                                "exon
                                                                                                                                                                                                                                     "exon
                                                                                                                                                                                                                                                                                                                                                                                                                               "exon
                                                                                                    ac
                                                                                                                          ab
                                                                                                                                                                                                                                             ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   *
                                                                                                                                                                                                                                                                                                                                                                                                                             ű
                                                                                                                                                                                                                                                                           of 1 nucleotide deletion 4076..4088
                      9
                                                                                                                                                                                                                                                                                                                                  σ
                                                                                                                                 polymorphic site"
6572..6677
                                    polymorphic site"
9164..9209
                                                                                                                                                                              polymorphic site"
4602..4614
                                                                                            ထ္ခ
                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4=
                                                                                                                                                                                                                                                                                                                                                                                                        ហ្វ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                  4223
                                                                                                                                                                                                      4391..4392
                                                                                                                                                                                                                                                                                                                          3903..4224
                                                                                                                                                                                                                                                                                                                                                                                               3598..3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2725
                                                                                                          6678..9163
                                                                                                                                                                                                                             4365..6571
                                                                                                                                                                                                                                                                                                                                                                                                                      3407..3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3063..3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2569..2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                      within
                                                                                                                                                                                                                                                                                                                                                                                                                                                      intron
                                                                                                                                                                                                                                                                                                                                                                                 ហ្ម
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                            σ
```

```
************************
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= aj
/note= "exon 10"
intron 1066
/*tag= ak
/note= "intron 10"
misc_feature 1138
                                                                                                                                                                                                                                                                                                                                                                                                     *tag= an notes site notes feature 11994
                                                                                                                                                          /*tag= ax
/note= "known polymorphic site"
misc_feature 14046
                                                                                                                                                                                                      /*tag- av
/*tag- av
/note- "known polymorphic site"
/note- "known polymorphic site"
                                                                                                                                                                                                                                /*tag= au
/note= "known polymorphic site"
/note= "known polymorphic site"
misc feature 13539
                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                      /*tag= ap
/note= "known polymorphic site"
misc feature 13004
                                                                                                                                                                                                                                                                                                                                                                              /*tag= ao
/note= "known polymorphic site"
/note= "tage" 12952
                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= al
/note= "indefinite interval within intron
11598..15023
                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note=
intron
/*tag=
                                                                                                         /*tag- az
/note= "known polymorphic site"
/** feature 14874
                                                                                                                                /*tag= ay
/note= "known polymorphic site"
misc feature 14475
                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                         /*tag= at
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= am
/note= "exon 11"
                                                              misc_feature
                                                                                       misc_feature
                                                                                                                                                                                             /*tag= aw
/note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "known polymorphic site"
exon 10531..10607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note- "intron
               misc_feature
                                                                      /*tag= bb
/note= "known
                                                                                    /*tag= as
/note= "known
                                                                                                                                                                                                                                                                                                                    /*tag= ar
/note= "known
/note= "known polymorphic site"
                       /*tag= bd
/note= "intron
                                      note= "known polymorphic site"
intron 15024..15424
                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                           /*tag= aq
/note= "known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *tag=
                                                                                                                                                                                                                                                                                                                                   isc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "known
                                                                                                                                                                                                                                                                                                                                   polymorphic site"
13009
                                                                                                                                                                                     polymorphic
14041
                                                                                                                                                                                                                                                                                    polymorphic site"
13238
                                                                                                                                                                                                                                                                                                            polymorphic site"
13048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polymorphic s
9210..10530
                                                              polymorphic site"
14966
               11"
15284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9376
                                                                                                                                                                                                                                                                                                                                                                                                                                  11908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11384..11396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10608..11597
                                                                                                                                                                                            site"
                                                                                              site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10"
```

```
RESULT 14
ID T17516;
AC T17516;
AC T17516;
DT 04 OCT-1996 (first entry)
DE Mutated BRCA1 genomic sequence
KW Cancer therapy; breast and ovar
KW gene therapy; protein replaceme
OS Homo sapiens. Location/Qualif
FT exon
FT /*tag= a
FT /note= "exon 1"
FT /note= "intron 1"
FT /*tag= b
FT /*tag= c
FT /*tag= d
FT /note= "known polymorphic site
FT /*tag= d
FT /*tag= e
FT /*tag= f
FT /*tag= nisc_feature 1925.1937
FT misc_feature 2141
                                                                                                                                                                                                                                                                                                                                                                                                                        çр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Сb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ****************
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Note: remainder of annotations omitted.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= bk
/note= "intron 13"
misc_feature 1624
/*tag= bl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exon
/*tag=
/note=
intron
/*tag=
                                                                                                                                                                                                                                                                                  04-OCT-1996 (first entry)
Mutated BRCAl genomic sequence from PM16.
Cancer therapy; breast and ovarian cancer predisposing gene; immunogen; antibody production; germline alteration; probe; lesion neoplasia; human gene therapy; protein replacement therapy; protein mimetic; BRCAl; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
/*tag= bj
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag- bh
/note= "indefinite interval within intron
ovon 15953..16126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note- "intron
misc_feature
    /*tag= f
/note= "indefinite interval within intron
misc_feature 2141
                                                                                                                                                                                                                                                                                                                                                                                                                                      intron
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= bi
/note= "exon 13"
                                                                                                                       /note= "known polymorphic site"
exon 1513..1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aaaaaattagccggggtggtggcttatgcctgtaatcccagctactcaggaggctgaggc 7522
                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAGTTAGTCAGGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT - AGGAGACTGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "known polymorphic site"
16127..16565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "exon 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 7.4%;
Similarity 76.1%;
175; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   þf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15647..15659
                                                                                                                                                                                                                                            Location/Qualifiers 256..355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15425..15511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 105; DB 21;
Pred. No. 1.93e-42;
0; Mismatches 52
                                                                                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 24025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1168
```

ω ••

```
/note= "exon 8" 66 intron 66 /*tag= ab /note= "intron 8" misc_feature 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= m
/note= "intron 4"
misc_feature 30
/note- "known polymorphic site"
exon 9164..9209
/*tag- ae
                                                                                                                                                                                                                                                                          /*tag= w
//note= "intron 7"
misc_feature 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exon
/*tag=
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                  /*tag= x
/note= "known polymorphic site"
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                        /note- "intron 6" misc_feature 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= n
/note= "indefinite interval within intron
exon 3329..3406
                                                note= "known polymorphic site"
nisc_feature 9106
                                                                                                                                                               /note- "known polymorphic site"
exon 6572..6677
                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag=
/note=
intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
intron
/*tag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
/note=
                                                                                                                                                                                              '*tag= y
'note= "indefinite interval within intron 7"
nisc_feature 6538
                                                                                                                                                                                                                                                                                                                               'note-
                                                                                                                                                                                                                                                                                                                                                    note- "known polymorphic site"
3814..3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note= "intron 5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nisc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= j
/note= "indefinite interval within intron 3"
exon 2678..2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note- "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note= "indefinite interval within intronusc_feature 3653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           • "exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "known polymorphic site"
2789..3328
                                                                                                                                                                                                                                                                                                                               "exon 7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "exon 5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
"known polymorphic site"
2207..2260
                                                                                          6823
                                                                                                                            6678..9163
                                                                                                                                                                                                                                                                              4391..4392
                                                                                                                                                                                                                                                                                                                  4365..6571
                                                                                                                                                                                                                                                                                                                                                                                           4076..4088
                                                                                                                                                                                                                                                                                                                                                                                                                              3903..4224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3407..3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3063..3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3598..3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2569..2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2261..2677
```

```
misc_feature
/*tag= bb
                                                                                            /*tag= ay
/note= "known
misc_feature
                                                                                                                       /*tag= ax
/note= "known
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "exon 9"
misc_feature
/*tag= af
                                                           /*tag= az
/note= "known polymorphic site"
misc_feature 14891
                                                                                                                                          /*tag= aw
/note= "known polymorphic site"
/note= "known polymorphic site"
//note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                     /*tag= an //note= "known polymorphic site" //note= "known polymorphic site" //note= "12952"
                /note=
                                                                                                                                                                      /*tag- av
/note= "known polymorphic site"
/note= "known 14041
                                                                                                                                                                                                    /*tag= au
/note= "known polymorphic site"
misc_feature 13951
                                                                                                                                                                                                                             /*tag= at
/note= "known polymorphic site"
/note= "known polymorphic site"
misc feature 13539
                                                                                                                                                                                                                                                       /*tag= as
/note= "known polymorphic site"
misc feature 13448
                                                                                                                                                                                                                                                                                                          /*tag= ag
/note= "known polymorphic site"
misc feature 13048
                                                                                                                                                                                                                                                                                                                                      /*tag= ap
/note= "known polymorphic site"
misc_feature 13009
                                                                                                                                                                                                                                                                                                                                                                /*tag= ao
/note= "known polymorphic site"
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= ah
/note= "known polymorphic site"
10531..10607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= ag
/note= "intron 9"
                                                                                                                                                                                                                                                                                     /note= "known polymorphic site"
misc_feature 13238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
                                                                                                                                                                                                                                                                                                                                                                                                                      nisc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                 nisc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /noté= "indefinite interval within intron 10"
exon 11598..15023
                                                    note- "known
                                                                                                                                                                                                                                                                                                                                                                                                                     note- "known polymorphic site"
misc_feature 11994
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= al
/note= "exon 11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= aj
/note= "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note= "known polymorphic site"
intron 9210..10530
                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
bc
"intron 11"
                "known polymorphic site"
15024..15424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "exon 10"
                                           polymorphic site"
14966
                                                                                               polymorphic site"
14874
                                                                                                                         polymorphic site"
14475
                                                                                                                                                                                                                                                                                                                                                                                                                                                 11908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11384..11396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10608..11597
```

```
Note: remainder of annotations omitted
                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                       /*tag= b
/note= "intro
misc_feature
                                                                                                                                                                                                                        1107
                                                                                                                                                                                                                                                                                                                               1286
                                                                                                                                  T17-15
T17-29;
T17-29;
T17-29;
T17-29;
07-OCT-1996 (first entry)
Mutated BRCAl genomic sequence from PMA22.1.
Cancer therapy; breast and ovarian cancer predisposing gene; immunogen; antibody production; germline alteration; probe; lesion neoplasia; human gene therapy; protein replacement therapy; protein mimetic; BRCAl; ds.
                                                                                                                                                                                                                                                                                                                                       7464 aaaaaattagccggggtggtggcttatgcctgtaatcccagctactcaggaggctgaggc 7523
                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
/*tag= bl
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "intron
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note- "exon 13" misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon
/*tag=
                                exon
                                                                                  /*tag=
/note=
intron
                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= bk
/*tag= bk
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-
intron
       /*tag-
/note-
intron
                                       /note=
                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note- "indefinite interval within intron 12"
exon 15953..16126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'noté= "intron 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ′*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         isc_feature
                                                                                                                                                                                                                                                                                                                                                               y Match 7.4%;
Local Similarity 76.1%;
nes 175; Conservative
                                                                                                                                                                                                                                 aggagaatcgcttgaac-ccaggaagcagaggttgcagtgagccaagatcgcaccattgc 7582
                                                                                                                                                                                                                        AGGAGGATCACTTGAGCTCCCAGAGGTCAAGGCTGCAGAGAGCCCATGGTGCTGCCACTGC
                                                                                                                                                                                                                                                                                            AAAAGTTAGTCAGGTGTGGTGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                                                                                                                                                                                                                                                                                              "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "exon
                                                                                           "exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "known
                                "known polymorphic site"
1513..1611
                exon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       प्व
                         a
                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polymorphic site"
15425..15511
                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                   口
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16077
                                                          1295
                                                                                   356..1512
                                                                                                           Location/Qualifiers 256..355
                                                                                                                                                                                                                                                                                                                                                                                                                                                    16243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15647..15659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15512..15952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15284
        1612..2206
                                                                                                                                                                                                                                                                                                                                                              Score 105; DB 21; Length 24026; Pred. No. 1.93e-42; 0; M1smatches 52; Indels 3;
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                            1168
                                                                                                                                            human;
                                                                                                                                                                                                                                                                                                                                                               ω
        /*tag= ab
/note= "intron f
misc_feature
'**ag= ac
                                                                 exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                       /*tag=
/note=
intron
                                                                                                                                          misc_feature
                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                             /*tag=
/note=
                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                    /*tag= p
/note= "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                      intron
                                                                                                                                                                                                                                                                                                                                                                                                                /mote= "intron
                                                                                                                                                    /note= "intron
                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                 note-
                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                  intron
                                                                                                                                                                                                                                                         'note=
                                                                                                                                                                                                                                                                                    /note=
                                                                                                                                                                                                                                                                                                                                                               note-
                                                                                                                                                                                                                                                                                                                                                                                                                                           'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note= "exon 4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= e
/note= "intron
                                                                                                                                                                                                                               "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "exon
                                                                                                                                                                             "exon 7"
                                                                                                                                                                                                                                                                                                                                                               "exon 5"
                                                                                                                                                                                                                                                          "exon 6"
                                                8
                                                                                                                                                                                                                                o<sup>z</sup>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2725
```

FERRE STATE OF THE STATE OF THE

밁 င္မ 밁 ç 밁 Сþ 용

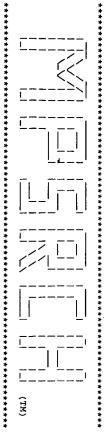
```
/*tag= x
/note= "known polymorphic site"
/note= "known polymorphic site"
#1sc feature 4602..4614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= q
/note= "indefinite interval within
misc_feature 3653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= g
/note= "known polymorphic site"
/note= "known polymorphic site"
// 2207..2260
                                                                                   /*tag= y
/note= "indefinite interval within intron
misc feature 6538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- "indefinite interval within intron exon 3329..3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- "indefinite interval within intron exon 2678..2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note- "indefinite interval within intron misc_feature 2141
                                               /note= "known polymorphic site"
exon 6572..6677
                                                                                                                                                                                                                                                                                            /note= "indefinite interval within intron
exon 4225..4364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "known polymorphic site"
2789..3328
                                                                                                                                                                                                                                                                                                                                                                                                                                               "known polymorphic site" 3814..3902
                                                                                                                                                                                             4391..4392
                                                                                                                                                                                                                                                                                                                                            4076..4088
                                                                                                                                                                                                                                                                                                                                                                                            3903..4224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3598..3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3063..3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1925..1937
6678..9163
                                                                                                                                                                                                                                                4365..6571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3407..3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2569..2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2261..2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ហ្វ
```

```
**********************
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           444444444444444444
                                                                                            /*tag= aw
/note= "known |
misc_feature
                                       /*tag= ay
/note= "known
misc_feature
                /*tag= az
/note= "known polymorphic site"
misc_feature 14891
                                                                     /*tag= ax
/note= "known polymorphic site"
misc_feature 14475
                                                                                                                                               /*tag= au
/note= "known polymorphic site"
misc_feature 13951
                                                                                                                                                                        /*tag= at
/note= "known polymorphic site"
misc feature 13539
                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= aj
/note= "intron 10"
/... feature 11384..11396
                                                                                                                                                                                                 /*tag- as
/note- "known polymorphic site"
/note- "known 13448
                                                                                                                                                                                                                                                                                                         /*tag= ao
/note= "known polymorphic site"
misc_feature 13004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mote= "exon 9"
misc_feature
                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= ad
/note= "known polymorphic site"
/note= "known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "know
misc_feature
                                                                                                                         misc_feature
                                                                                                                                                                                                                             /*tag= ar
/note= "known polymorphic site"
/note= 13238
                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                   /*tag= an
/note= "known polymorphic site"
/note= 12952
                                                                                                                                                                                                                                                                                                                                                             /*tag- am
/note= "known polymorphic site"
misc_feature 11994
                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "indefinite interval within intron 10"
exon 11598..15023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note- "known polymorphic site"
exon 10531..10607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
 'note=
                                                                                                                                 /*tag= av
/note= "known
                                                                                                                                                                                                                                                     '*tag= aq
'note= "known polymorphic site"
"isc feature 13048
                                                                                                                                                                                                                                                                               /*tag- ap
/note- "known polymorphic site"
- '-- feature 13009
                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= al
/note= "exon 11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= ag
/note= "intron 9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note= "known polymorphic site"
| 9210..10530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag-
"known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "exon 10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "known polymorphic site"
eature 9106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                               polymorphic site"
14046
                                                                                                                         polymorphic site"
14041
                                           polymorphic
14874
                                                                                                                                                                                                                                                                                                                                                                                             11908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10608..11597
```

```
မှ
                                                     밁
                                                                     မှ
                                                                                        밁
                                                                                                         ç
                                                                                                                           밁
                                                                                                                                                                                                 444444444444444444444444444444
                                                                                                                                                                               Note: remainder of annotations omitted
                                                                                                                                             Matches
                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                 Intro.
/*tag-bj
/note="intron 13"
misc_feature 16243
/*tag-bk
/note="known polymorphic site"
/note="known polymorphic site"
                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= bc
/note= intron 11"
/note= intron 11"
misc_feature 15284
/*tag= bd
/*tag= bd
                                                                                                                                                                                                                                                                                                     misc_feature 150***..._

/*tag= bg
/note= "indefinite interval within intron
15953..16126
                                                                                                        misc_feature
/*tag= bb
/note= "known |
intron
1107
                                    1167
                                                                                                                                                                                                                                                                                                                                                                              exon
/*tag=
/note=
                                                                                 7464 aaaaaattagccggggtggtggcttatgcctgtaatcccagctactcaggaggctgaggc 7523
          1226 AMAAGTTAGTCAGGTGGGGGGCCCTTCCTTGTAGTTCCAGCTACT-AGGAGACTGAGGC
                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                           /".cay" ~~
/note= "intron 12"
misc_feature 15647..15659
                                                                                                                                                                                                                                                            note- "known polymorphic site"
intron 16127..16565
                                                                                                                                                                                                                                                                                                 /note= "exon 13"
                                 7.4%;
nl Similarity 76.1%;
175; Conserva+'...
                                                                                                                                                                                                                                                                                                                                                                                                 "known polymorphic site"
15425..15511
                                                                                                                                                                                                                                                                                                                                                                                "exon 12"
                                                                                                                                                                                                                                                                                                                                                              þf
                                                                                                                                                                                                                                                                                                                                                                                        ьe
                                                                                                                                                                                                                                                                                                                                                                                                                                                     polymorphic site"
15024..15424
                                                                                                                                                                                                                                                                                        16077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14966
                                                                                                                                                                                                                                                                                                                                                                       15512..15952
                                                                                                                                          Score 105; DB 21; Length 24026; Pred. No. 1.93e-42; 0; Mismatches 52; Indels 3;
                                                                                                                                            ω
••
                                                                                                                                            Gaps
```

Search completed: Wed Mar 25 Job time: 213 secs. 13:32:37



Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by IntelliGenetics, Inc.

MPsrch_pp protein - protein database search, using Smith-Waterman algorithm

bular output not generated. on: Tue Mar 24 17:02:13 1998; MasPar time 10.83 Seconds 717.291 Million cell updates/sec

Description: Perfect Score: Sequence: Title: >US-08-236-918A-8 (1-255) from 5674704.pep 1925

1 MGNSCYNIVATLLLVLNFER.....QEEDGCSCRFPEEEEGGCEL 255

Scoring table: РАМ 150 Gap 11

Searched:

95051 seqs, 30469580 residues

Post-processing: Minimum Match 0% Listing first 45 summaries

Database:

pir53
1:ann1 2:ann2 3:ann3 4:ann4 5:unann1 6:unann2 7:unann3
8:unann4 9:unann5 10:unann6 11:unann7 12:unann8
13:unann9 14:unann10 15:unann11 16:unann12 17:unenc
18:unrev .

Statistics: Mean 43.622; Variance 106.400; scale 0.410

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

				15 136							8 174	7 17	6 17	5 18	4 198	3 20	2 1116	1 1922	Result No. Score
3 6.4	6.6	4 7.0	5 7.0	7	7	7	8	8	8	8	4 9.0	9	9	9	10	6 10.7			Query Match
461	952 1	988 1	427	277 1		272 16				289 1	325	349	138 18	326	260	250	256 1	255 1	Length DB
7 A35356	5 I50612	5 150611	2 GQHUN	5 A60771	7 A26431	н	6 154182			6 A46515	6 B43692	9 D36858	8 \$32385	2 GQVZML	2 A46517	2 A49053	6 B32393	5 JT0752	B ID
Ω.	protein-tyrosine kin	protein-tyrosine kin	nerve growth factor	B-cell activation pr	nerve growth factor	gene ox40 protein -	tumor necrosis facto	OX40 antigen precurs	CD40 - mouse	B cell-associated su	T2 protein - rabbit	G4R protein - variol	rt		CD27 antigen precurs	CD27 antigen precurs	T-cell antigen 4-1BB	lymphocyte activatio	Description
3.89e-03	9.63e-04	1.75e-04	1.31e-04	9.83e-05	5.51e-05	3.08e-05	1.42e-07	1.21e-08	2.54e-09		9.91e-10		2.04e-10	5.72e-11	4.52e-13	3.29e-14	6.29e-164	0.00e+00	Pred. No.

45	44	43	42	41	40	39	38	37	36	35 5	34	33	32	31	30	29	28	27	26	25	24	23	22	21
114	114	114	114	113	113	113	115	115	115	117	117	117	118	118	117	119	120	119	121	121	121	122	122	123
												٠		6.1				٠						٠
1712	1005	987	981	898	327	251	995	987	987	1786	1680	985	984	755	713	1790	577	416	1607	474	459	335	314	3106
16	16	15	16	16	16	16	15	16	16	ω	15	15	16	16	14	ω	0	7	ω	7	7	15	15	œ
A38261	-	Φ	0	S47489	48	503	A56599	865	U.	MMHUB1	A43434	I51672	A39753	A44315	A35502	MMFFB1	A60501	JN0006	MMMSB2	B38634	I48854	A40036	I37383	S53868
protein pr	receptor tyrosine ki		receptor-like tyrosi	Ϋ́	apoptosis-mediating	ich prot	embryo kinase 5 – ch	mouse developmental	ated	cha	C 3.4.21.7	receptor tyrosine ki	protein-tyrosine kin	lage oligomer	major surface-labele	laminin chain B1 pre	'n	nerve growth factor	ä	r necros	e tumour	apoptosis-mediating	FAS soluble protein	laminin-2 alpha-2 ch
	.48e-	.48e-	.48e-		.84e	.84e-	.43e-	.43e-	.43e	.00e	.00e-	.00e-	.53e	1.53e-0	.00e	.16e-	.86e	.16e-	.74e-	.74e-	.74e-	.12e-	.12e-	3.89e-0

ALIGNMENTS

Db 61 tcdic	Db 1 mgnsc Qy 1 mGNSC	Query Ma Best Loo Matches	242 SUMMARY	234,235	187-213 138,149	1-17 18-255	KEYWORDS FEATURE		COMMENT This	COMMENT This	##molecule ##residues	#accession	# C + C + C	#journal	#authors	ACCESSIONS REFERENCE	ORGANISM DATE	ENTRY	RESULT 1
tcdicrqckgvfrtrkecsstsnaecdctpgfhclgagcsmceqdcrqgqeltkkgckdc 120	mgnscynivatlllvlnfertrslqdpcsncpagtfcdnnrnqicspcppnsfssagggr 60 	h 99.8%; Score 1922; DB 15; Length 255; Similarity 99.6%; Pred. No. 0.00e+00; 254; Conservative 1; Mismatches 0; Indels 0; Gaps 0;	#binding_site phosphate (Ser) (covalent) (by protein kinase C) #status predicted #length 255 #molecular-weight 27927 #checksum 9240	predicted\ #binding_site phosphate (Thr) (covalent) (by casein kinase II) #status predicted\	#status predicted #label MAT\ #domain transmembrane #status predicted #label TMM\ #binding_site carbohydrate (Asn) (covalent) #status	<pre>#domain signal sequence #status predicted #label SIG\ #product lymphocyte activation-induced receptor ILA</pre>	<pre>glycoprotein; phosphoprotein; receptor; transmembrane protein</pre>	responses.	nerve-growth-factor/tumor-necrosis-factor receptor family. This receptor recongnizes soluble, cell-surface bound or	This protein belongs to a member of the human	##residues 1-255 ##label SCH	<pre>nerve-growth-factor/tumor-necrosis-factor receptor family. JT0752</pre>	A receptor induced by lymphocyte activation (ILA): a new member of the human	ene (1993) 134:295-298	Schwarz, H.; Tuckwell, J.; Lotz, M.	JT0752 JT0752	#IOTMAI_name HOMO Sapiens #COMMOn_name man 30-Sep-1993 #sequence_revision 20-Aug-1994 #text_change 07-Feb-1997	<pre>JT0752 #type complete lymphocyte activation induced receptor ILA precursor - human</pre>	

```
밁
                            δÃ
                                                            밁
                                                                                         δÃ
                                                                                                                        밁
                                                                                                                                                     Ş
                                                                                                                                                                                     밁
                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                  #introns
CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENETICS
                                                                                                                                                                                                                                                                                                                                                                                       FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                              Query Match
Best Local 9
                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FJOURNAL PROC. Natl. Acad. Sci. U.S.A. (
#title CDNA sequence of two inducible #cross-references MUID:89184547
##molecule +---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #authors Kwon, B.S.; Kozak, C.A.; Kim, K.K.; Pickard, R.T.
#journal J. Immunol. (1994) 152:2256-2262
#title Genomic Organization and Chromosomal Localization
#Cell Antigen 4-1BB.
#cross-references MUID:94179805
#accession 148879
                                                                                                                                                                                                                                                                                                                                          94-256
MARY
                                                                                             121
   238
                                                              180
                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ##molecule_type DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ##residues 1-256 ##label KWO
##cross-references GB:J04492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ##residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ##residues 1-256 ##label RES
##cross-references EMBL:U02567; N
                                                                                                                                                        61
                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                              Match 58.0%;
Local Similarity 57.3%;
ses 145; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51
                                                                                                                                                                                                                                                 ۳
                                                                                                          slgtfndqngtgvcrpwtncsldgrsvlktgttekdvvcgppvvsfspsttisvtpeggp 179
:||||||: |:::: | :
                                                                                                                                                                     mgnncynvvvivlllvgcekvgavqnscdncqpgtfcrky-npvckscppstfssiggqp 59
|||:|||:| :| :| |: ::| |! :||| :| |: |:||| |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acscrcpqeeegg 250
                               EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEED
                                                            g-ghslqvltlflalts-alllalifitllfsvlkwirkkfphifkqpfkkttgaaqeed 237
                                                                                          CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR 179
                                                                                                                                                       TCDICRQCKGVFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC 120
                                                                                                                                                                                                                   MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cscrfpeeeeggcel 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cfgtfndqkrg1crpwtncs1dgksv1vngtkerdvvcgpspad1spgassvtppapare 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CSCREPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #domain signal sequence #status predicted #label SIG\
#product 4-1BB protein #status predicted #label MAT
#length 256 #molecular-weight 27598 #checksum 4884
                                                                                                                                                                                                                                                                                                                                                                                                                  35/1; 69/1; 115/1; 138/2; 156/3; 181/1; 225/1 #superfamily NGF receptor repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                     transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B32393; I48879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I48879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                              Score 1116; DB 16;
pred. No. 6.29e-164;
49; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NID:g409177; CDS_PID:g409178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1989) 86:1963-1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T-cell genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                         Length 256;
                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                              4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
F
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
```

```
ACCESSIONS
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSIONS
REFERENCE
                                                                                                                                                                                                                                                                                                                                                     RESULT
ENTRY
                                                                                                                                                                                                                                                                           DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δã
                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                               ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENTRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-20
21-182
27-63
65-105
121-179
183-202
203-250
95,162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #authors Gravestein, L.A.; Blom, B.; Nolten, L.A.; de Vries, E.;
der Horst, G.; Ossendorp, F.; Borst, J.; Loenen, W.A.
#journal Eur. J. Immunol. (1993) 23:943-950
Cloning and expression of murine CD27: comparison with another lymphocyte-specific member of the nerve growt factor receptor family.
#cross-references MUD1:93209296
#accession A49053
                                                                                           #title Genomic organization and
human CD27 gene.
#cross-references_MUID:93094588
                                                                              #accession
                                                                                                                                                       #journal
                                                                                                                                                                                              #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ##cross-references NCBIN:128168; NCBIP:128169
##note sequence extracted from NCBI backbone
RFICATION #superfamily CD27 antiqen; NcB receptor repeat homology
CDS duplication; glycoprotein; homodimer; receptor; surface
antigen; T-cell; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ##molecule_type mRNA
##residues 1-250 ##label GRA
                                    ##molecule_type DNA
                                                        ##status
  ##cross-references
                  ##residues
                                                                                                                                                                                                                                                                                                                                                                                                                                  94 CLGAGCSMCE 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Госат
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNNRNQI-CSPC-PPNSFSSAGGQRT-CDICRQCKGVFRTRKECSSTSNAECDCTPGFH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCSCRFPEEEEGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crdqectecd 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     =
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26;
                                                                                                                                                                                                                                                            A46517 *type complete
CD27 antigen precursor · human
CD27L receptor; T cell activation antigen CD27
#formal_name Homo sapiens #common_name man
18 Jun-1993 *sequence_revision 22-Apr-1995 *text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A49053 #type complete
CD27 antigen precursor - mouse
CD27L receptor; T cell activation antigen CD27
#formal_name Mus musculus #common_name house mouse
19-Dec-1993 #sequence_revision 22-Apr-1995 #text_change
22-Apr-1995
                                                                                                                                                     Hagemeijer, A.; Borst, J. J. Immunol. (1992) 149:3937-3943
                                                                          A46517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10.7%;
larity 37.1%;
Conservative
                                                                                                                                                                                            Loenen, W.A.;
                                                                                                                                                                                                                A46517; A46454
A46517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A49053
                                                                                                                                                                                                                                                    23-Feb-1997
1-260 ##label LOE
es NCBIP:120386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #domain signal sequence #status predicted #label SIG\
#domain extracellular #status predicted #label EXT\
#domain NGF receptor repeat homology #label NG1\
#domain NGF receptor repeat homology #label NG2\
#domain NGF receptor repeat homology #label NG2\
#domain NGF receptor repeat homology #label NG2\
#region proline/serine/threonine-rich\
                                                      not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #domain transmembrane #status predicted #label INT\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #binding_site carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     predicted
1 250 #ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #molecular-weight 28164
                                                                                                                                                                                          Gravestein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 206; DB 2; 1
Pred. No. 3.29e-14;
14; Mismatches 26
                                                                                                                                     chromosomal
                                                                                                                                                                                            L.A.; Beumer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 250;
                                                                                                                                     localization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #checksum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                              S.; Melief, C.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6216
                                                                                                                                     of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4-1BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
```

```
ACCESSIONS
REFERENCE
#authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENETICS
#gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                               FEATURE
                                                                                                                                            CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                       DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-20
21-191
27-63
65-105
121-188
192-211
212-260
95
                                                                                                                                                                                                                                                                                                   #journal #title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #authors
#journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #map_position
                                                                 64-105
                                                                                                                                                                                                                        #accession
                                                                                                                                                                                                                                      #title Myxoma virus expresses a secreted protein with homology the tumor necrosis factor receptor gene family that contributes to viral virulence.

#cross-references MUID:91335768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth factor/tumor necrosis factor receptor gene family.
#cross-references MUID:92013149
                          66,181,205,238
                                            106-147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIFICATION ORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##molecule_type mRNA
##residues 1-58,'A',60-260 ##label CAM
##cross-references NCBIN:60285; NCBIP:60289
##note sequence extracted from NCBI backbone
##note sequence in serum and urine is formed by proteolysis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ##cross-references GDB:132582
p_position 12p13-12p13
                                                                                                                                                        ##molecule_type DNA
##residues 1-326 ##label UPT
##cross-references GB:M37976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112 crdkectecd 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ##note
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity hes 27; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLGAGCSMCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNNRNQI-CSPCPPN-SFSSAGGQRT-CDICRQCKGVFRTRKECSSTSNAECDCTPGFH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46/1; 90/1; 150/1; 180/1; 220/1

#superfamily CD27 antigen; NGF receptor repeat homology

duplication; glycoprotein; homodimer; phosphoprotein;

receptor; surface antigen; T-cell; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Camerini, D.; Walz, G.; Loenen, W.A.; Borst, J.; Seed, B. J. Immunol. (1991) 147:3165-3169
The T cell activation antigen CD27 is a member of the nerve
                                                                                                                                      #superfamily myxoma
                                                                                                                                                                                                                        A40566
                                                                                                                                                                                                                                                                                                                                                                                                                   GQVZML #type complete
T2 protein - myxoma virus
#formal_name myxoma virus
31-Dec-1992 #sequence_revi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDB:CD27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A46454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A46454
                                                                                                     glycoprotein
                                                                                                                                                                                                                                                                                                                 Upton, C.; Macen, J.L.; Schreiber, Virology (1991) 184:370-382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 26-Apr-1996
                                                                                                                          homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence extracted from NCBI backbone authors propose an alternative repeat pattern
#domain NGF receptor repeat homology #label
#domain NGF receptor repeat homology #label
#binding_site carbohydrate (Asn) (covalent)
predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #region proline/serine/threonine-rich\
#domain transmembrane #status predicted #label INT\
#domain intracellular #status predicted #label INT\
#domain intracellular #status predicted #label INT\
#domain intracellular #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #domain extracellular #status predicted #label EXT\
#domain NGF receptor repeat homology #label NG1\
#domain NGF receptor repeat homology #label NG2\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #domain signal sequence #status predicted #label SIG\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  260
                                                                                                                                                                                                                                                                                                                                                                                                                 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #molecular-weight 29186 #checksum 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 198; DB 2; Pred. No. 4.52e-13; 14; Mismatches 25
                                                                                                                                          virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (strain Lausanne)
                                                                                                                                      T2 protein;
                                                                                                                                                                                                                                                                                                                                                                                                                   31-Dec-1992 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 260;
                                                                                                                                                                                                                                                                                                                                      M.; Mcfadden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                        NGF receptor repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                      L NG2\
L NG3\
#status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                   ៥
```

```
ACCESSIONS
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                               ##experimental_so
REFERENCE $46868
                                                                                                                                                                                                                                                                                                                                                                                                              ENTRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENTRY
                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                ACCESSIONS
                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                             ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.3%;
Best Local Similarity 34.1%;
Matches 29; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #authors
#journal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #accession
                 #accession
                                                                                                                #authors
                                                                                                                                                                                                                             #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #title
                                               #description
                                                                #submission
                                                                                                                                                                                                                                              #description
                                                                                                                                                                                                                                                             #submission
                                                                                                                                                                                                                                                                                #authors
                                                                                                                                                                             preliminary ##molecule_type DNA ##residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ##cross-references EMBL:X69198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ##status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 rdrvcdcsagnycllkgqegcricapktk 128
                                                                                                                                                              ##cross-references GB:X69198
   ##status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74 hnricecspgyycllkgssgc-kac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14 clscppgtyasrlcdsktntqctpcgsgtftsrnnhlpaclscngrcnsnqvetrscntt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82 SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40 ctscppgsyasrlcgpgsdtvcspcknetftastnhapacvscrgrctghlsesqscdkt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 SNAECDCTPGFHCLGAGCSMCEQDC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                               7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h 9.5%;
Similarity 31.5%;
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                       D36858 #type complete
G4R protein - variola virus
B2BR protein (COP)
                            Kolykhalov, A.A.; Blinov, V.M.; Gytorov, V.V.; Po
S.G.; Chizhikov, V.E.; Frolov, I.V.; Totmenin,
Shchelkunov, S.N.; Sandakhchiev, L.S.
submitted to the EMBL Data Library, April 1992
Nucleotide sequence analysis of the region of van
XhoI F O H P Q genome fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shchelkunov, S.N.; Blinov, V.M.; Sandakhchiev, L.S. FEBS Lett. (1993) 319:80-83 Genes of variola and vaccinia viruses necessary to overcome the host protective mechanisms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene G4R protein - variola virus (fragment)
#formal_name Variola virus
19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change
19-Mar-1997
                                                                                                                                                                                                                             not shown.
D36858
                                                                                                                                                                                                                                                           submitted
                                                                                                                                                                                                                                                                                             D36858; S46888; S35987
A36859
                  S46888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S32385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #length 326
                                                                                                                                                                                                                                                                              Blinov, V.M.
                                                                                                                                                                                                                                                                                                                               30-Sep-1993 #sequence_revision 15-Nov-1996
                                                                                                                                                                                                                                                                                                                                                              #formal_name variola virus
                                                                                                                                                                                                                                                                                                                              5-Nov-
                                                                                                                                           _source strain India-1967, ssp. major,
preliminary
                                                                                                                                                                             1-349 ##label
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            preliminary
1-138 ##label_SHC
                                                                                                                                                                                                                                                             β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #type fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #checksum 6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #molecular-weight 35208
                                                                                                                                                                                                                                                             GenBank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 179; DB 18;
Pred. No. 2.04e-10;
20; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 183; DB 2;
Pred. No. 5.72e-11,
20; Mismatches 3;
                                                                                                                                                                             BLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                             November 1992
                                                                                                                                                                                                                                                                                                                                             30-Sep-1993 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #checksum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                              isolate Ind3
                                                                                               Pozdnyakov,
n, A.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
```

```
ACCESSIONS
REFERENCE
                                                                                                                             ORGANISM
DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSIONS
REFERENCE
#authors
                                                                                                                                                                                RESULT
ENTRY
                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENTRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
 #journal #title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68-109
110-151
                                                        #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64-105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106-147
                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##residues 1-325 ##labe
##cross-references GB:M17433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ##molecule_type DNA
##residues 1-349 ##label KOL
###cross-references EMBL:X67117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ##molecule_type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  104 hnricecspgyycllkgssgc-kac 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ##experimental_source strain India-1967, isolate Ind3
FICATION #superfamily NGF receptor repeat homology
                                                                                                                                                                                                                                                       91 GFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                 y Match 9.0%;
Local Similarity 31.3%;
hes 25; Conservative
                                                                                                                                                                                                                                                                                                                              33 AGTFCDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSSTSNAECDCTP
                                                                                                                                                                                                                                                                                                                                                 49 asrlcgpgsntvcspcedgtftastnhapacvscrgpctghlsesqpcdrthdrvcncst 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82 SNAECDCTPGFHCLGAGCSMCEQDC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44 clscppgtyasrlcdsktntqctpcgsgtftsrnnhlpaclscngrcnsnqvetrscntt 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                          gnycllkgqngcricapqtk 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9.3%;
Similarity 34.1%;
                                                                                A46515 #type complete
B cell-associated surface molecule CD40 - mouse
#formal_name Mus musculus #common_name house mouse
18-Jun-1993 #sequence_revision 18-Nov-1994 #text_change
03-Mar-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B43692 #type complete
T2 protein - rabbit fibroma virus
#formal_name rabbit fibroma virus, Shope fibroma virus
30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change
23-May-1997
B43665
Grimaldi, J.C.; Torres, R.; Kozak, E.A.; Howard, M.; Cockayne, D.A. J. Immunol. (1992) 149:3921-3926 Genomic structure and chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B43692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #domain
#length 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #superfamily myxoma virus T2 protein; NGF receptor repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tumorigenic poxviruses: genomic organization an of the telomeric region of the Shope fibroma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Upton, C.; DeLange, A.M.; McFadden,
Virology (1987) 160:20-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1-325 ##label UPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #domain NGF receptor repeat homology #label NG2
#domain NGF receptor repeat homology #label NG3
th 325 #molecular-weight 35132 #checksum 4629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #domain NGF receptor repeat homology #label
#domain NGF receptor repeat homology #label
|th 349  #molecular-weight 38189  #checksum :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         preliminary
                                                                                                                                                                                                                                                                                                                                                                                                 Score 174; DB 6; Lo
Pred. No. 9.91e-10;
15; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 179; DB 9;
Pred. No. 2.04e-10;
20; Mismatches 29
                                   R.; Kozak,
kayne, D.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 9; Length 349;
mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 325;
                                                      ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>.</u>
                                                      .
A.;
                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                    Chang,
of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and DNA sequence ma virus genome.
                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . NG2\
. NG3
2016
                                                      R.; Clark,
murine CD40
                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
```

ı,

```
KEYWORDS
SUMMARY
                                                                                                 RESULT
ENTRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSIONS
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
ENTRY
                                                                                                                                                                           δÃ
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARY
                                                             ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #authors Torres, R.M.; Clark, E.A.
#journal J. Immunol. (1992) 148:620-626
#title Differential increase of an alternatively polyadenylated
#title species of murine CD40 upon B lymphocyte activation.
#cross-references_MUID:92105763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #cross-references MUID:93094586
#accession A46515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ##status preliminary; not col

##molecule_type nucleic acid

##residues 1-289 ##label GRI

##cross-references NCBIP:120357

##cross-imental_source BALB/c, liver

##experimental_source BALB/c, liver
                                                                                                                                                                                                                                                                                          110 hctskdceacaqhtpcipgfgvmematettdtvchpcpvgffsngsslfekcypwtsced 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ##residues 1-305 ##label TOR ##cross-references NCBIN:75206; NCBIP:75207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ##molecule_type mRNA
##residnee
                                                                                                                                                                            142 DGKSVLVNGTKERDVVCG
                                                                                                                                                                                                              170 knlevlqkgtsqtnvicg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##note
                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 31.2%;
hes 43; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142 DGKSVLVNGTKERDVVCG 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 hctskdceacaqhtpcipgfgvmematettdtvchpcpvgffsnqsslfekcypwtsced 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ##note
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170 knleviqkgtsqtnvicg 187
                                                                                                                                                                                                                                                    93 HCLGAGCSMCEQD--CKQG---QEL-T-KKG--CKDCCFGTFNDQKR--GICRPWTNCSL 141
                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93 HCLGAGCSMCEQD--CKQG---QEL-T-KKG--CKDCCFGTFNDQKR--GICRPWTNCSL 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51 ctalektq-chpcdsgefsaqwnreirchqhrhcepngglrvkkegtaesdtvctckegq 109
| :: | | | | : | | : | : | :| :| | | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 8.9%;
Local Similarity 31.2%;
                                                                                                                                                                                                                                                                                                                                                                   51 ctalektq-chpcdsgefsagwnreirchghrhcepngglrvkkegtaesdtvctckegg 109
                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10
                                                                                                                                                                                                                                                                                                                                  CDN-NRNQICSPCPPNSFSSA-GGQRTCDICRQCK-G-VFRTRKECSSTSNAECDCTPGF 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDN-NRNQICSPCPPNSFSSA-GGQRTCDICRQCK-G-VFRTRKECSSTSNAECDCTPGF
$12783 #type complete
OX40 antigen precursor - rat
nerve growth factor receptor homolog
#formal_name Rattus norvegicus #common_name Norway
30-Sep-1993 #sequence_revision 30-Sep-1993 #text_ch
30-May-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A46476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence extracted from NCBI backbone transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #formal_name Mus musculus #common_name house mouse
18-Jun-1993 #sequence_revision 18-Nov-1994 #text_c
16-Feb-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A46476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #length 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A46476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CD40 - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #length 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A46476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence extracted from NC
yth 289 #molecular-weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #type complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #molecular-weight 33617 #checksum
                                                                                                                                                                                                                                                                                                                                                                                                           Pred.
21; N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 171; DB 16;
Pred. No. 2.54e-09;
21; Mismatches 58
                                                                                                                                                                                                                                                                                                                                                                                                                               Score 171; DB 16;
Pred. No. 2.54e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI backbone
ht 32111 #che
                                                                                                                                                                                                                                                                                                                                                                                                             58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 305;
                                                                                                                                                                                                                                                                                                                                                                                                             Indels 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #checksum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
```

```
KEYWORDS
FEATURE
1-19
                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
ENTRY
                                 δÃ
                                                                          밁
                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                             GENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    몽
 밁
                                                                                                                                                                                                                                                                    SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
#authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSIONS
                                                                                                                                                                                      Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-271
211-235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #authors Mallett, S.; Fossum, S.; Barclay, A.N.
#journal EMBO J. (1990) 9:1063-1068
#title Characterization of the MRC OX40 antigen of activated CD4
#costive T lymphocytes - a molecule related to nerve grafactor receptor.
#cross-references_MUID:90214614
                                                                                                                                                                                                                                                                                                        #gene
                                                                                                                                                                                                                                                                                                                                                                                                                                   title Construction and evaluation of a hncDNA library of human transcribed sequences derived from a somatic cell hybri cross-references MUID:93252381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #journal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155 DVVC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160 dtvc 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ##molecule_type mRNA
##residues 1-271 ##label MAL
##cross-references EMBL:X17037
##cross-references EMBL:X17037
                                                                                                                                                                                                                                                                  ##cross-references GDB:1230195

#length 435 #molecu
                                                                                                                                                                                                                                                                                                                                                                              ##molecule_type mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.6%;
Local Similarity 30.6%;
nes 38; Conservation
                                                                                                                                                                                        / Match 8.2%;
Local Similarity 31.5%;
nes 52; Conservative
                                                                                                                                                                                                                                                                                                                                                               ##residues
                                     81
                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                                                     #Tersidues 1-435 ##label RES 1-435 ##recross-references GB:L04270; NID:g339761; CDS_PID:g339762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----pr--qds--shklgv-dcvpcppghfspgsngackpwtnctlsgkqirhpasnsl 159
                                   TSNAECDCTPGFHCLG-A-GCSMCE--QDCKQG-Q-ELTK---KGCKDC--C-FGTF-ND
                                                                  krktqcrcqpgmfcaawalecthcellsdcppgteaelkdevgkgnnhcvpckaghfqnt 178
                                                                                                                                                   csrcppgtyvsakcsrirdtvcatcaensynehwnylticqlcrpcdpvmgleeiapcts 118
sspsarcqphtrcenqglveaapgtaqsdttcknpleplppemsg 223
                                                                                                               CSNCPAGTF----CDNNRNQICSPCPPNSFSSA-GGQRTCDICRQCKGV--FRTRKECSS 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNNRNQICSPCPPNSFSSAGGQRTCDICRQC--KGVFRTRKECSSTSNAECDCTPGFHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #formal_name Homo sapiens #common_name man
24-May-1996 #sequence_revision 24-May-1996
11-Apr-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #domain signal sequence #status predicted #label #product OX40 antigen #status predicted #label Machine #domain transmembrane #status predicted #label TV #length 271 #molecular-weight 29895 #checksum 379
                                                                                                                                                                                                                                                                                                        GDB:LTBR
                                                                                                                                                                                                                                                                                                                                                                                                                     I54182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genomics (1993) 16:214-218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S12783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baens, M.; Chaffanet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tumor necrosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Marynen,
                                                                                                                                                                                                                                                                                                                                                                                                preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S08036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #type complete
                                                                                                                                                                                                                                                                  #molecular-weight 46709 #checksum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               factor receptor 2-related protein - human
                                                                                                                                                                                      Score 158; DB 16; Length 435;
Pred. No. 1.42e-07;
26; Mismatches 66; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 166; DB 16; Length 271; Pred. No. 1.21e-08; 25; Mismatches 48; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M.; Cassiman,
                                                                                                                                                                                                                                                                                                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                  GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.J.;
                                                                                                                                                                                        Indels 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 den Berghe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIG\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ε.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>υ</u>
```

```
ACCESSIONS
REFERENCE
                                                                                                                                                                                                                     RESULT
ENTRY
                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                       δδ
                                                                                                                                                                                                                                                                                                                                                                                        뮍
                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALTERNATE_NAMES
ORGANISM
DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                   ACCESSIONS
REFERENCE
                                                                                                                                                                  ORGANISM
                                                                                                                                                                                    ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #gene
#introns
                                 #journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #title Gene structure and chromosomal localization of the mouse homologue of rat OX40 protein.
#cross-references_MUID:95255413
factor receptor.
#cross-references MUID:87115859
                                                                                    #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #cross-references MUID:94044750
#accession I48700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #journal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ##residues 1-272 ##label RES
##cross-references EMBL:Z21674; NID:g312827; CDS_PID:g312828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             128 QKRGI-CRPWINCSLDGKSVLVNGTKERDVVCGPSPADLSPGASS
                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                       161 davc 164
                                                                                                                                                                                                                                                                                                                                                                          111 -----pr--qds--gyklgv-dcvpcppghfspgnnqackpwtnctlsgkqtrhpasds1 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ##molecule_type mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ##status
                                                                                                                                                                                                                                                                                                                                                       95 LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                                                                                                                                                                       37 CDNNRNQICSPCPPNSFSSAGGQRTCDICRQC--KGVFRTRKECSSTSNAECDCTPGFHC 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                   52 cdhtrdtlchpcetgfyneavnydtckqctqcnhrsgselkqnctptqdtvcrcrpgtq- 110
                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                         DVVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        n 7.3%;
Similarity 30.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #type complete
gene ox40 protein - mouse
Ox40 antigen
#form="
                                                                                                                                                                                  A26431 #type complete nerve growth factor recep. NGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Calderhead, D.M.; Buhlmann, J.E.; van den F
Claassen, E.; Noelle, R.J.; Fell, H.P.
J. Immunol. (199) 151:5261-5271
Cloning of mouse Ox40: a T cell activation
mediate T-B cell interactions.
                                                                                                                               #formal_name Rattus norvegicus #common_name Norway rat
19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change
05-Apr-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45/1; 86/1; 122/1; 144/2; 210/1; 250/1 #length 272 #molecular-weight 30153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N.A.; Barclay, A.N.
Eur. J. Immunol. (1995) 25:926-930
                             Nature (1987) 325:593-597
Gene transfer and molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                I48334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Birkeland, M.L.; Copeland, N.G.; Gilbert,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #formal_name Mus musculus #common_name house mouse
02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change
                                                                                Radeke, M.J.; Misko,
                                                                                                                 A26431; PH1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I48700; I48334; S34377
                                                                                                   A26431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                  Shooter, E.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-Oct-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 140; DB 16;
Pred. No. 3.08e-05;
21; Mismatches 52
                                                                                                                                                                                                    receptor precursor,
                                                                                  T.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 52;
                                                                              Hsu,
                             cloning
                                                                                C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 272;
                               of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #checksum
                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171
                                                                                                                                                                                                    low affinity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.J.; Jenkins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eertwegh,
                             rat nerve growth
                                                                                                                                               #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      marker that may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

```
ACCESSIONS
REFERENCE
#authors
                                                                                                                                                                                                                                                                                                 RESULT
ENTRY
                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                      ALTERNATE_NAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #introns
CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 7.2%;
Best Local Similarity 31.0%;
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-251
30-191
33-66
68-109
110-198
150-190
198-249
252-273
274-425
                                                                #journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #journal #title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ETICS
#cross-references
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124 eacsvcevgsglvfscqdkqntvceecpegtysdeanhvdpclpctvcedterqlrectp 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##residues 1-20 ##label MET

##cross references GB:X61269

**This receptor is found on sensory and sympathetic neurons, on neuroblastoma cells, and on a variety of nonneuronal derivat of the neural crest.

**This receptor is found on sensory and sympathetic neurons, on neuroblastoma cells, and on a variety of nonneuronal derivat of the neural crest.

**This receptor when it is thought to form a high-affinity receptor when associates with the 140K trk proto-oncogene, which contains intracellular tyrosine kinase domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                     184 wadaeceeipg 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ##residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ##molecule_type DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##molecule_type mRNA
                                                                                                                                                                                                                                                                                                                                                                                            81 TSNAECDCTPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26 DPCSNCPAGT---F-CDNNRNQICSPCPPNSFSSAGGQR-TCDICRQCKGVFRTRKECSS 80
                                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                               A60771 #type complete
B-cell activation protein CD40 precursor -
B-cell surface antigen Bp50
                                   Stamenkovic, I.; Clark, E.A.; Seed, B.
EMBO J. (1989) 8:1403-1410
A B-lymphocyte activation molecule related to the
growth factor receptor and induced by cytokines
                                                                                                                                 S04460; A60771
S04460
                                                                                                                                                                            #formal_name Homo sapiens #common_name man 03-Jun-1993 #sequence_revision 03-Feb-1994 07-Feb-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         duplication; glycoprotein; heterodimer; monomer;
phosphoprotein; receptor; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gene (1992) 121:247-254
Regulatory elements and transcriptional regulation by
testosterone and retinoic acid of the rat nerve growth
                                                                                                                                                                                                                                                                                                 A60771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PH1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #superfamily nerve growth factor receptor; NGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Metsis, M.; Timmusk, T.; Allikmets, R.; Saarma, M.; Persson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PH1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #domain extracellular #status predicted #label EXT\
#region cysteine-rich\
#comain NGF receptor repeat homology #label NG1\
#domain NGF receptor repeat homology #label NG3\
#domain NGF receptor repeat homology #label NG3\
#domain NGF receptor repeat homology #label NG4\
#region serine/threonine-rich\
#domain transmembrane #status predicted #label NEM\
#domain intracellular #status predicted #label INT\
#binding_site carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                factor receptor promoter.
MUID:89356608
                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1-425 ##label RAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #product nerve
#label MAT\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domain signal sequence #status predicted #label SIG\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  predicted
1425 #molecular-weight 45432 #checksum 6249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 138; DB 7; Length 425;
Pred. No. 5.51e-05;
18; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        growth factor receptor #status predicted
                                                                                                                                                                                                    #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ა.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             derivatives
                                      nerve
in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             part
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
```

```
FEATURE
1-20
                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                  Š
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                   Search completed: Tue Mar 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 7.1%;
Best Local Similarity 28.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-193
194-215
216-277
153,180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #journal
#title
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ##cross-references GDB:215268
#map_position 20q12-20q13.2
WORDS B-cell; glycoprote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #accession
   time
                                                                                                                                                                                                                                                                                                                                                                             lll ctseacescvlhrscspgfgvkqiatgvsdticepcpvgffsnvssafekchpwtscetk 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ##molecule_type protein
##residues 21-50 ##label
##experimental_source Burkitt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##residues 1-277 ##label
##cross-references EMBL:X60592
                                                                                                                                                  143 GKSVLVNGTKERDVVCGP 160
                                                                                                                                                                                                                      171 dlvvqqagtnktdvvcgp 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ##molecule_type mRNA
                                                                                                                                                                                                                                                                                                     94
                                                                                                                                                                                                                                                                                                                                                                                                                                                            37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51 ctefteteclpcgesefldtwnrethchqhkycdpnlglrvqqkgtsetdtictceegwh 110
                                                                                                                                                                                                                                                                                                 CLGAGCSMCE-Q-DCKQGQELTK--KGCKD--C--C-FGTFNDQKRGI--CRPWTNCSLD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNNRNQICSPCPPNSFSSAGGQRT-CDICRQCK-GV-FRTRKECSSTSNAECDCTPGFH
69 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      predicted
#length 277 #moi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A60771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aspenstroem, P.; Perlmann, P.
J. Immunol. (1989) 142:562-567
Biochemical characteristics and partial amino acid sequence of the receptor-like human B cell and carcinoma antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GDB:CD40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Braesch-Andersen, S.; Paulie, S.; Koho,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A60771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell; glycoprotein; phosphoprotein; surface antigen;
transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #product B-cell activation protein CD40 **status experimental **label MATN through the extracellular **status predicted **label **domain transmembrane **status predicted **label **domain intracellular **status predicted **label **domain intracellular **status predicted **label **binding_site carbohydrate (Asn) (covalent) **status predicted **status predicted **label **la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #domain signal sequence #status
                                   17:03:22 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #molecular-weight 30619 #checksum 6261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 136; DB 15;
Pred. No. 9.83e-05;
24; Mismatches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BRA
lymphoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        predicted #label SIG\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Raji
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H.; Nika,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYT\
                                                                                                                                                                                                                                                                                                                                                                                                                                                        93
```

Release 2.1D John F. Collins, Biocomputing Research Unit. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.

MPsrch_pp protein - protein database search, using Smith-Waterman algorithm

on: Tue Mar 24 17:03:43 1998; MasPar time 7.28 Seconds 742.674 Million cell updates/sec

Title: >US-08-236-918A-8

Description: (1-255) from 5674704.pep

Perfect Score: 1925

Sequence: 1 MGNSCYNIVATLLLVLNFER.....QEEDGCSCRFPEEEEGGCEL 255

Searched: 59021 segs, 21210388 residues

Scoring table:

PAM 150 Gap 11

Post-processing: Minimum Match 0% Listing first 45 summaries

הדפרדות דודפר 47 פתוחוום

Database:

swiss-prot34
1:part1 2:part2 3:part3 4:part4 5:part5 6:part6 7:part7
8:part8 9:part9 10:part10 11:part11

Statistics: Mean 45.059; Variance 89.948; scale 0.501

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Score	Query Match	Length	B	ID	Description	Pred. No.
1	1925	<u>, , , , , , , , , , , , , , , , , , , </u>	255	ㅂ	41BB_HUMAN	4-1BB LIGAND RECEPTOR	0.00e+00
2	1116		256	Н	ŧ., I	LIGAND	6.16e-200
ω	206	10.7	250	N	CD27_MOUSE	CD27L RECEPTOR PRECUR	1.05e-17
4	199	10	260	þ	CD27_HUMAN	RECEPTOR	1.67e-16
υ	183	9	326	10	VT2_MYXVL	TUMOR NECROSIS FACTOR	
σ	183	9	415	9	TNRC_MOUSE	LYMPHOTOXIN-BETA RECE	.48e-1
7	179	9	349	10	VC22_VARV	PROTEIN C22/B28 HOMOL	.93e-1
&	174	9	325	10	VT2_SFVKA	TUMOR NECROSIS FACTOR	
9	171	8	289	N	CD40_MOUSE	CD40L RECEPTOR PRECUR	.18e-1
10	166	8	271	7	OX40_RAT	OX40L RECEPTOR PRECUR	•
11	158	8	435	9	TNRC_HUMAN	LYMPHOTOXIN-BETA RECE	1.03e-09
12	140	7.3	272	7	OX40_MOUSE	OX40L RECEPTOR PRECUR	6.53e-07
13	141	7	277	7	OX40_HUMAN	OX40L RECEPTOR PRECUR	4.60e-07
14	138	7	425	6	NGFR_RAT	LOW-AFFINITY NERVE GR	1.31e-06
15	136	7	277	N	CD40_HUMAN	CD40L RECEPTOR PRECUR	2.63e-06
16	135	7.	427	σ	NGFR_HUMAN	LOW-AFFINITY NERVE GR	.71e-
17	133	6.	461	9	TNR2_HUMAN	TUMOR NECROSIS FACTOR	· 7.37e-06
18	127	6.6	986	w	EPH3_HUMAN	TYROSINE-PROTEIN KINA	.62e-
19	127	6.	993	ω	EPH3_MOUSE	TYROSINE-PROTEIN KINA	5.62e-05
20	123		1609	σ	LMG1_HUMAN	LAMININ GAMMA-1 CHAIN	2.12e-04
21	122	6.3	335	ω	FASA_HUMAN	FASL RECEPTOR PRECURS	2.95e-04
22	121	6.3	474	9	TNR2_MOUSE	TUMOR NECROSIS FACTOR	4.09e-04

4 4 4 5 4 3	444	39	365	ωω ω4	31 32	30 30	27 28	2 2 6 5	23
106 106	108 108	114 114 114	113 113	115 115	117 117	118 118	119 117	120 120	121 119
ហៈ ហៈ ហៈ ហៈ ហៈ ហ		ហ្ល	л. 9.9	ი ი 0 0	6.1 1	6.1 1	6.2	o o	6.3 2.3
1801 595 915	454 1039 1786	987 1005 1712	327 461	987 995	1680 1786	755 984	1788 713	577 984	1607 416
726	9119	φω σ	φ ω	ωσ	4 0	ωN	დ თ	ωw	თთ
LMB2_RAT CD30_HUMAN PAC6_RAT	TNR1_MOUSE ATHL_HUMAN LMB1_MOUSE	HTK_HUMAN EHK1_RAT TGFB_RAT	FASA_MOUSE	HTK_MOUSE EPH3_CHICK	FUR2_DROME	COMP_RAT EPH2_RAT	LMB1_DROME TSA4_GIALA	TRBM_MOUSE EPH2_HUMAN	LMG1_MOUSE
LAMININ BETA-2 CHAIN CD30L RECEPTOR PRECUR SERINE PROTEASE PC6 P	TUMOR NECROSIS FACTOR POTASSIUM-TRANSPORTIN LAMININ BETA-1 CHAIN	TYROSINE-PROTEIN KINA TYROSINE-PROTEIN KINA LATENT TRANSFORMING G	FASL RECEPTOR PRECURS	TYROSINE-PROTEIN KINA	FURIN-LIKE PROTEASE 2 LAMININ BETA-1 CHAIN	CARTILAGE OLIGOMERIC TYROSINE-PROTEIN KINA	LAMININ BETA-1 CHAIN MAJOR SURFACE-LABELED	THROMBOMODULIN PRECUR	LAMININ GAMMA-1 CHAIN LOW-AFFINITY NERVE GR
3.43e-02 4.65e-02 4.65e-02	7.31e-03 2.53e-02 3.43e-02	3.89e-03 3.89e-03 3.89e-03		2.83e-03 2.83e-03	1.50e-03 1.50e-03	1.08e-03 1.08e-03	7.84e-04 1.50e-03	5.67e-04 5.67e-04	4.09e-04 7.84e-04

ALIGNMENTS

H H H H H H H H H H H H H H H H	E E E E E E E E E E E E E E E E E E E	CCCCCRRRRR	R R R R R R R R R R R R R R R R R R R	RESULT ID AC
TRANSMEM DOMAIN DOMAIN REPEAT REPEAT REPEAT CARBOHYD CARBOHYD	33 29 7	H S L O C	SEQUENCE FRO TISSUE-BLOOD MEDLINE; 943 ALDERSON M.R FALK B., ROU EUR. J. IMMU	188_ 0701 1-FE 1-FE 1-FE 1-FE 1-FE 1-FE 1-CB UKAR
187 213 214 255 47 159 47 86 47 118 119 1159 138 138 149 149	CON 5713 2922 297 27 10 10 10 10 10 10 10 10 10 10 10 10 10	UNCE FROM N.A. UNE: 94085794. ARZ H., TUCKWELL J., LOTZ I 1134:295-298(1993). FUNCTION: RECEPTOR FOR THE FUNCTION DURING T CELL ACTIVI SUBCELLULAR LOCATION: TYPE TISSUE SPECIFICITY: EXPRESS CELLS.	M N.A ; 74434 7. SM X E., NOL.	STAND (REL. 31 (REL. 33) (REL. 33) RECEPTC GEN ILA) (HUMAN)
POTENTIAL. CYTOPLASMIC (P 3 X TNER-CYS. TNER-CYS 1. TNER-CYS 2. TNER-CYS 3. POTENTIAL. POTENTIAL.	IS A LA NGFR. REPEA	UNCE-FROM N.A. (UDE-BLOOD; (UNE: 94085794. ARZ H., TUCKWELL J., LOTZ M.; (114:295-298(1993). (114:295-298(1993). (114:295-208(1993). (114:205-208(1993). (UNCTION: RECEPTOR FOR THE PUTATIVE CYTOKINE 4-1BBL. POSSIBLY ACTIVE DURING T CELL ACTIVATION. SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN. TISSUE SPECIFICITY: EXPRESSED ON THE SURFACE OF ACTIVATED T CELLS.	 ITH C.A., TOUGH T.W., DAVIS-SMITH T., ARMITAGE R.J. BAKER E., SUTHERLAND G.R., DIN W.S., GOODWIN R.G.; 24:2219-2227(1994).	ARD; PRT; 255 AA. (CREATED) (LAST SEQUENCE UPDATE) (LAST ANNOTATION UPDATE) R PRECURSOR (T-CELL ANTIGEN 4-1BB HOMOLOG) . CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;

```
RESULTA
AC PERMIT
AC PERMI
   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                            EMBL; J04492; G201122; - - EMBL; U02567; G409178; - - PIR; B32393; B32393. PROSITE; PS00652: TNFD MOTERIAL PROSITE PRO
                                                                                                                                                                                                                                                                                                                                             -!- FUNCTION: RECEPTOR FOR THE PUTATIVE CYTOKINE 4-1BBL. POSSIBLY ACTIVE DURING T CELL ACTIVATION.
-!- SUBUNIT: PRINCIPALLY AN HONDIMER, BUT ALSO FOUND AS A MONOMER.
-!- SUBUNIT: ASSOCIATES WITH P56-LCK.
-!- INDUCTION: OPTIMAL BY PMA AND IONOMYCIN.
-!- TISSUE SPECIFICITY: EXPRESSED ON THE SURFACE OF ACTIVATED T-CELLS.
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- STMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
SEQUENCE
                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHARACTERIZATION, AND SEQUENCE OF MEDITOR; 93139510.
POLLOK K.E., SIM Y.-J., ZHOU Z., KWON B.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE; 94179805.
KWON B.S., KOZAK C.A., KIM K.K.,
J. IMMUNOL. 152:2256-2262(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE; 89184547.
KWON B.S., WEISSMAN S.
PROC. NATL. ACAD. SCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. STRAIN-BALB/C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-FEB-1991 (REL. 17, CREATED)
01-FEB-1991 (REL. 17, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 37, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 37, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 37, LAST SEQUENCE UPDATE)
4-1BB LIGAND RECEPTOR PRECURSOR (T-CELL ANTIGEN 4-1BB).
MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                      SIGNAL
                                                                                                                                                                                   RECEPTOR;
                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41BB_MOUSE
P20334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 mgnscynivatlllvlnfertrs1qdpcsncpagtfcdnnrnqicspcpppnsfssaggqr 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMMUNOL. 150:771-781(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tcd1crqckgvfrtrkecsstsnaecdctpgfhc1gagcsmceqdckqgqe1tkkgckdc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CSCRFPEEEEGGCEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cscrfpeeeeggcel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEEDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pghspqiisfflaltstallfllffltlrfsvvkrgrkkllyifkqpfmrpvqttqeedg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CFGTFNDQKRGICRPWTNCSLDGKSYLVNGTKERDVVCGPSPADLSPGASSVTPPAPARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cfgtfndqkrgicrpwtncsldgksvlvngtkerdvvcgpspadlspgassvtppapare 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                               SCOO652; TNFR_NGFR.
GLYCOPROTEIN; REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCI.
              24
256
187
208
256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
27899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1925; DB 1;
Pred. No. 0.00e+00;
EXTRACELLULAR (POTENTIAL).
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          K -> R (IN
; 331C1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                               4-1BB LIGAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86:1963-1967(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                   SIGNAL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HURTADO J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PICKARD R.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REF. 2).
                                                                                                                                                                                   TRANSMEMBRANE
                                                                                                               RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KIN K.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PICKARD R.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
THE THE TENT OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPTTTTT
                                                                                                                                                                                                                                                              A CSSENDORP F., BOOM B., NOLTEN L.A., DE VRIES A CSSENDORP F., BORST J., LOENEN W.A.;
L EUR. J. IMMUNOL. 23:943-950(1993).
-!- FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN A ROLE IN SURVIVAL OF ACTIVATED T-CELLS.
-!- SUBGUNIT: HOMODIMER (BY SIMILARITY).
-!- SUBGUNITA HORODIMER (BY SIMILARITY).
-!- SUBGULULAR LOCATION: TYPE I MEMBRANE PROTEITINSUE SPECIFICITY: IN THYMUS AND SPLEEN, BUTTISSUES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                        DOMAIN
TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1995
01-FEB-1995
01-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CD27_MOUSE
P41272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
REPEAT
REPEAT
REPEAT
REPEAT
CARBOHYD
     REPEAT
CARBOHYD
                                     REPEAT
REPEAT
                                                                                                                                               SIGNAL
CHAIN
                                                                                                                                                                                                 EMBL; L24495; -; NO
PIR; A49053; A49053
PROSITE; PS00652; T
                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-B6/CBAFIJ; MEDLINE; 93209296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CD27L RECEPTOR PRECURSOR
                                                                                                                                                                                                                                    -!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE EMBL; L24495; -; NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EUTHERIA; RODENTIA.
                                                                                                                                                                                  -CELL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 CFGTFNDQK-RGICRPWTNCSLDGKSVLVNGTKERDVVCGPSPADLSPGASSVTPPAPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MGNSCYNIVATLLLVLNFERTRSLQDPCSNCPAGTFCDNNRNQICSPCPPNSFSSAGGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acscrcpqeeegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCSCRFPEEEEGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCDICROCKGYFRTRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKGCKDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g-ghslqvltlflalts-alllalifitllfsvlkwirkkfphifkqpfkkttgaaqeed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EPGHSPQIISFFLALTSTALLFLLFFLTLRFSVVKRGRKKLLYIFKQPFMRPVQTTQEED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145;
                                                                                                                                                                                  GLYCOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
17
46
86
118
128
138
256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (REL. 31, CREATED)
(REL. 31, LAST SEQUENCE UPDATE)
(REL. 31, LAST ANNOTATION UPDATE)
TOR PRECURSOR (T-CELL ACTIVATION A
   21
21
183
204
26
26
105
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58.0%;
ilarity 57.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
A
                                                                                                                                                                                                     TNFR_NGFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-THYMUS;
   20
250
182
203
250
141
163
104
141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159
45
85
117
119
128
138
138
27598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHORDATA;
                                                                                                                                                                                  TRANSMEMBRANE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 X TNER-CYS.
TNER-CYS 1.
TNER-CYS 2.
TNER-CYS 3.
TNER-CYS 4.
POTENTIAL.
POTENTIAL.
POTENTIAL.
FOCENTIAL.
SC2352FC CRC32;
3 X TNFR-CYS.
TNFR-CYS 1.
TNFR-CYS 2.
TNFR-CYS 3.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1116; DB 1;
Pred. No. 6.16e-200;
49; Mismatches 55;
                                                                                                                          CD27L RECEPTOR.
EXTRACELLULAR (POTENTIAL)
                                                                                         CYTOPLASMIC (POTENTIAL)
                                                                                                             POTENTIAL
                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                             MEMBRANE PROTEIN
                                                                                                                                                                              SIGNAL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ጅ
                                                                                                                                                                                                                                                                                                                                                                                                                   VRIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANTIGEN CD27).
                                                                                                                                                                                RECEPTOR;
                                                                                                                                                                                                                                                       CYSTEINE-RICH
                                                                                                                                                                                                                                                                                                                                                                 KNOWN
                                                                                                                                                                                                                                                                                          TUB
                                                                                                                                                                                                                                                                                                                                                                                                                   .
H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 256
                                                                                                                                                                                                                                                                                          ION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                 AS
                                                                                                                                                                                                                                                                                                                                                                                                                   VAN
                                                                                                                                                                                                                                                                                                                                                               CD27L. MAY
                                                                                                                                                                                                                                                                                          IN NON-LYMPHOID
                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                   DER
                                                                                                                                                                                                                                                         REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                   HORST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
            밁
                                                                        STATESTATIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SS
                                          Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P26842;
01-AUG-1992 (REL. 23, CREATED)
)01-AUG-1992 (REL. 23, LAST SEQUENCE UPDATE)
01-FEB-1995 (REL. 31, LAST ANNOTATION UPDATE)
CD27L RECEPTOR PRECURSOR (T-CELL ACTIVATION ANTIGEN CD27) (T14).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
SEQUENCE
                                                                                   MOD_RES
CONFLICT
                                                                                                                                     DOMAIN
REPEAT
                                                                                                                                                        TRANSMEM
DOMAIN
                                                                                                                                                                                                                                          PIR; A46454; A46454.
PIR; A46517; A46517.
MIM; 186711; -.
                                                                                                                                                                                                                                                                                                                                                                   BORST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA;
EUTHERIA; PRIMATES.
                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE; 93094588.
                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-MONONUCLEAR BLOOD CELLS;
MEDILNE; 92013149.
CAMERINI D. WALZ G., LOENEN W.A.M.,
J. IMMUNOL. 147:3165-3169(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CD27_HUMAN
                                                                         SEQUENCE
                                                                                                       CARBOHYD
                                                                                                                 REPEAT
                                                                                                                            REPEAT
                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                -1- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-1- TISSUE SPECIFICITY: FOUND IN MOST T LYMPHOCYTES.
-1- PTM: PHOSPHORYLATED AND O-GLYCOSYLATED (PROBABLE).
-1- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                            PHOSPHORYLATION
                                                                                                                                                                                                                                PROSITE; PS00652; TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                              COENEN W.A., GRAVESTEIN L.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112
            53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
nes 26; Conser
                               Local Similarity tes 27; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94 CLGAGCSMCE 103
                                                                                                                                                                                                                                                                                                                                                           IMMUNOL. 149:3937-3943(1992).
                                                                                                                                                                                                                                                                                                                            SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                                                                                     FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND A ROLE IN SURVIVAL OF ACTIVATED T-CELLS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNNRNQI-CSPC-PPNSFSSAGGQRT-CDICRQCKGVFRTRKECSSTSNAECDCTPGFH 93
crdqectecd
                                                                                                                                                                                                                                                                          M63928; G180085; -.
                                                                                                                                                                                                                      GLYCOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    162
250 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10.7%;
larity 37.1%;
Conservative
                                Conservative
                                                                         Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                          10.3%;
                                                                                    20
260
191
212
212
213
141
141
141
141
159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    162
28164 MW;
                                                                         29156
                                                                                                                                                                                                                      TRANSMEMBRANE;
                                                                         MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 206; DB 2;
Pred. No. 1.05e-17
14; Mismatches 2
                               Score 199; DB 2;
Pred. No. 1.67e-16;
14; Mismatches 25
                                                                                                               TNFR-CYS 1.
TNFR-CYS 2.
TNFR-CYS 3.
                                                                                                                                            CYTOPLASMIC (POTENTIAL).
3 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
AF6F74ED CRC32;
                                                                       PHOSPHORYLATION (POTENTIAL).
A -> T (IN REF. 2).
F707E40F CRC32;
                                                                                                       POTENTIAL.
                                                                                                                                                                             EXTRACELLULAR
                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                               BEUMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                       RECEPTOR.
                                                                                                                                                                                                                                                                                                                                                                              s.
                                                                                                                                                                                                                     SIGNAL;
                                                                                                                                                                                                                                                                                                                                                                                                                                  BORST J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260 AA
                                                                                                                                                                                                                                                                                                                                                                              MELIEF C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TETRAPODA; MAMMALIA;
                                                                                                                                                                             (POTENTIAL)
                                25;
                                                                                                                                                                                                                      RECEPTOR;
                                                                                                                                                                                                                                                                                                                                                 KNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 250
                                                                                                                                                                                                                                                                                                                                                                                                                                  SEED
                                                  Length 260;
                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                 AS
                                                                                                                                                                                                                                                                                                                                                                                                                                  В.;
                                                                                                                                                                                                                                                                                                                                                 CD27L.
                                                                                                                                                                                                                                                                                                                                                                              HAGEMEIJER
                                                                                                                                                                                                                      REPEAT;
                                4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                 MAY PLAY
                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
```

```
THE SULP THE
RR ROCC OG DET DET RCC
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 2
                                                                                                                                          01-OCT-1996 (REL. 3
01-OCT-1996 (REL. 3
01-OCT-1996 (REL. 3
LYMPHOTOXIN-BETA RE
                                                                                                                                                             TNRC_MOUSE
P50284;
01-0CT-1996
01-0CT-1996
01-0CT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VT2_MYXVL
P29825;
                                                                             MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-APR-1993 (REL. 25, CREATED)
01-APR-1993 (REL. 25, LAST SEQUENCE UPDATE)
01-FEB-1994 (REL. 28, LAST ANNOTATION UPDATE)
TUMOR NECROSIS FACTOR SOLUBLE RECEPTOR PRECURSOR (PROTEIN T2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UPTON C., MACEN J.L., SCHREIBER M., N
VIROLOGY 184:370-382(1991).
-1- FUNCTION: BINDS TO TNF-ALPHA AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MYXOMA VIRUS (STRAIN LAUSANNE).
VIRIDAE; DS-DNA ENVELOPED VIRUSES; POXVIRIDAE; CHORDOPOXVIRINAE:
STRAIN=CVB;
                                                            EUTHERIA; RODENTIA.
                                                                                                                         TNFCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RECEPTOR;
                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; A40566; GQVZML.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE; 91335768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LEPORIPOVIRUSES
                                                                                                                                                                                                                                                                                                                                                       100 rdrvcdcsagnycllkgqegcricapktk 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                    28
                                                                                                                                                                                                                                                                                                                                                                                                                                                           40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REACH CELLULAR TARGET AND THEREBY ANTIVIRAL EFFECTS OF THE CYTOKINE
                                                                                                                                                                                                                                                                                                                                                                                                                                           ctscppgsyasrlcgpgsdtvcspcknetftastnhapacvscrgrctghlsesgscdkt 99
                                                                                                                                                                                                                                                                                                                               SNAECDCTPGFHCL--G-AGCSMCEQDCK 107
                                                                                                                                                                                                                                                                                                                                                                                                                    CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLGAGCSMCE 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crdkectecd 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNNRNQI-CSPCPPN-SFSSAGGQRT-CDICRQCKGVFRTRKECSSTSNAECDCTPGFH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P19438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M95181; G332310; -. A23729; E199442; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    h 9.5%;
Similarity 31.5%;
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9438; 1TNR.
PS00652; TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GLYCOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
205
238
326
TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326
186
104
104
147
186
66
181
205
238
35208
                                                                                                                                              RECEPTOR
                                                                                                                                          34, CREATED)
34, LAST SEQUENCE UPDATE)
34, LAST ANNOTATION UPDATE)
RECEPTOR PRECURSOR.
                                                                               CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCHREIBER M., MCFADDEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 183; DB 10;
Pred. No. 8.48e-14;
20; Mismatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
PROTEIN T2
4 X TNFR-CYS 1
TNFR-CYS 2
TNFR-CYS 3
TNFR-CYS 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THEREBY DEAMPENING THE POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2F059A61 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 326;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
```

```
RESULTANGE OF THE PROPERTY OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FIT FIT OF REAL PROPERTY OF THE PROPERTY OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1994
01-FEB-1994
01-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FORCE W.R.,
WARE C.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
                   SEQUENCE FROM N.A.
STRAIN-INDIA-1967 / ISOLATE IND3;
STRAIN-INDIA-1967 / ISOLATE IND3;
MEDLINE; 93202281.
SHCHELKUNOV S.N., BLINOV V.M., SANDAKHCHIEV L.S.;
FEBS LETT. 319:80-83(1993).
-!- SIMILARITY: CONTAINS TWO LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGIONS EMBL; X69198; G457087; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VC22_VARV
P34015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                              VARIOLA VIRUS.
VIRIDAE; DS-DNA
                                                                                                                                                                                                                                                                                                                                                                                       01-FEB-1994 (REL. 28, LAST 01-JUN-1994 (REL. 29, LAST PROTEIN C22/B28 HOMOLOG.
                                                                                                                                                                                                                                                                    ORTHOPOXVIRUSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBMITTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE; 96163885.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113 vapctsdrkaecrcqpgmscvyldnecvhceee 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53 pmhdvccsrcppgefvfavcsrsqdtvcktcphnsynehwnhlstcqlcrpcdivlgfee 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMUNE DEVELOPMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RKECSSTSNAECDCTPGFHC--LGAGCSMCEQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U29173; G881621;
L38423; G600223;
U30798; G1061327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
33; Conse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30:312-319(1995).
TION: RECEPTOR FOR THE LYMPHOTOXIN-BETA. POSSIBLE FUNCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (JUN-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -SNCPAG--TF--CDNNRNQICSPCPPNSFSSAGGQ-RTCDICRQCKGV--FRT 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WILLIAMS-ABBOTT L., BROWNING J., HESSION C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TASHIRO K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                 ENVELOPED
                                                                                                                                                                                                                                                                                                                                                                                                                   28, CREATED)
28, LAST SEQUENCE UPDATE)
29, LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.5<del>8</del>;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44956 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TO EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLYCOPROTEIN; REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAZAREA M.,
                                                                                                                                                                                                                                                                                                 VIRUSES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 183; DB 9;
Pred. No. 8.48e-14;
17; Mismatches 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
3C5DD121 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TNFR-CYS 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LYMPHOTOXIN-BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y SIMILARITY
                                                                                                                                                                                                                                                                                                 POXVIRIDAE; CHORDOPOXVIRINAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAKANO T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYSTEINE-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 415,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SASAYAMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIZARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6,
```

```
SOT TO THE TERM REPRESENTATION OF THE TERM REPRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQ SQ
  Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VT2_SFVKA $25943;

P25943;

01-MAY-1992 (REI

01-FEB-1994 (REI

TUMOR NECROSIS I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X67117; G516449; PIR; D36858; D36858.
PIR; S35987; S35987.
PIR; S46888; S46888.
HSSP; P19438; ITNR.
                                                                                                                                          REPEAT
CARBOHYD
CARBOHYD
                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                         DOMAIN
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE; 91207415.

MIGNALL J.M., DIN W.S., FARRAH T., UPTON C. MCFADDEN G., GOODWIN R.G.;

BIOCHEM. BIOPHYS. RES. COMMUN. 176:335-342(1991).

-i- FUNCTION: BINDS TO TNF-ALPHA AND BETA. PROBABLY PREVENTS TNF REACH CELLULAR TARGET AND THEREBY DEAMPENING THE POTENTIAL ANTIVIRAL EFFECTS OF THE CYTOKINE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                         -!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION EMBL; M17433; -; NOT_ANNOTATED_CDS.
EMBL; A23727; E199408; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE; 87321103.
UPTON C., DELANGE A.M.,
VIROLOGY 160:20-30(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SHOPE FIBROMA VIRUS (STRAIN KASZA) VIRIDAE; DS-DNA ENVELOPED VIRUSES;
                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00652; TNFR_NGFR. REPEAT.
                                                                                                                                                                                                      REPEAT
                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                     HSSP;
                                                                                                                                                                                                                                                                                                                                                                                      PIR; B43692; B43692.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EPORIPOVIRUSES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      104 hnricecspgyycllkgssgc-kac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44 clscppgtyasrlcdsktntqctpcgsgtftsrnnhlpaclscngrcnsnqvetrscntt 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82 SNAECDCTPGFHCLGAGCSMCEQDC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28 CSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSST 81
                                                                                                                                                                                                                                                                                                                                                                   P19438;
  Similarity
25; Conser
                                                                                                                                                                                                                                                                                                                                              19438; ITNR.
PS00652; T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                   ; GLYCOPROTEIN;

1 1 15

1 7 315

27 186

27 62

63 104

105 147

148 186

105 105

105 105

205 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31
31
67
349 AA;
                                                                             205
238
325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (REL. 22, CREATED)
(REL. 22, LAST SEQUENCE UPDATE)
(REL. 28, LAST ANOTATION UPDATE)
SIS FACTOR SOLUBLE RECEPTOR PRECUR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              108
66
108
38189 .
                                                                                                                                                                                                                                                                                                                                                TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.3%;
                    9.0%;
                                                                                 35132
                                                                                                REPEAT; SIGNAL.
POTENTIAL.
PROTEIN T2.
4 X TNER-CYS.
TNER-CYS.
TNER-CYS.
TNER-CYS.
TNER-CYS.
TNER-CYS.
TOPE-CYS.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MCFADDEN
                                                                                 MW:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₩,
Score 174; DB 10;
Pred. No. 2.63e-12;
15; Mismatches 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 179; DB 10;
Pred. No. 3.93e-13;
20; Mismatches 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 X TNFR-CYS.
TNFR-CYS 1.
TNFR-CYS 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFR-CYS 1.
INFR-CYS 2.
50D0B435 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               127
                                                                                 С9D2C87в
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POXVIRIDAE; CHORDOPOXVIRINAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SFV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRECURSOR
                                                                                 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29;
                                     Length 325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O.I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
```

Conservative

Indels

Ģ

Gaps

4;

```
Q
                                                                                                                                                                                                                                               SOFT TITTITE AND DRAW BROWN AND COLOR OF A PRICE AND CONTRACTOR OF A P
                           밁
                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                         Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M83312; G1553059; -
EMBL; M94126; G192526; -
EMBL; M94129; G192526; JC
EMBL; M94128; G192526; JC
EMBL; M94127; G19526; JC
EMBL; M94127; G19526; JC
EMBL; M46476; A46476.
                                                                                                                                                                                                                                                                    REPEAT
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP; P19438;
PROSITE; PS006
RECEPTOR; B-CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CD40.
MUS MUSCULUS (MOUSE).
מייי מייירים: METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CD40_MOUSE
P27512;
                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P27512;
01-AUG-1992 (REL. 23, CREATED)
01-CT-1996 (REL. 34, LAST SEQUENCE UPDATE)
01-OCT-1996 (REL. 34, LAST ANNOTATION UPDATE)
CD40L RECEPTOR PRECURSOR (B-CELL SURFACE ANTIGEN CD40) (BP50)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRIMALDI J.C., TORRES R., KOZAK C.A., HOWARD M., COCKAYNE D.A.; J. IMMUNOL. 149:3921-3926(1992).
                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN AS CD40L.
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- SUBLIBARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-BALB/C; TISSUE-LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-BALB/C;
TORRES R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 93094586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBMITTED (SEP-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE; 92105763.
TORRES R.M., CLARK E.A.;
J. IMMUNOL. 148:620-626(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                         110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                               51
                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49
hctskdceacaqhtpcipgfgvmematettdtvchpcpvgffsngsslfekcypwtsced 169
                                                                                           GFHCL--G-AGCSMCEQDCK 107
                                                                  CDN-NRNQICSPCPPNSFSSA-GGQRTCDICRQCK-G-VFRTRKECSSTSNAECDCTPGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gnycllkgqngcricapqtk 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTFCDNNRNQICSPCPPNSFSSAGGQ-RTCDICR-QCKGVFRTRKECSSTSNAECDCTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  asrlcgpgsntvcspcedgtftastnhapacvscrgpctghlsesgpcdrthdrvcncst 108
                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B-CELL;
                                                                                                                                                         8.9%;
larity 31.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1TNR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLYCOPROTEIN; TRANSMEMBRANE; REPEAT; SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TNFR_NGFR
                                                                                                                                                                                                                                                                                                                                  193
215
289
187
103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                               WW.
                                                                                                                                                      Score 171; DB 2;
Pred. No. 8.18e-12;
21; Mismatches 58
                                                                                                                                                                                                                                                                                    TNFR-CYS 1.
TNFR-CYS 2.
TNFR-CYS 3.
TNFR-CYS 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                           CD40L RECEPTOR EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                               X TNFR-CYS.
                                                                                                                                                                                                                                             D8D70A2C CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽.
                                                                                                                                                           58;
                                                                                                                                                                                                  Length 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLARK E.A.,
                                                                                                                                                         Indels
                                                                                                                                                         16;
                                                                                                                                                      Gaps
                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90
```

```
RESULT
ID T
AC P
DT 0
DT 0
DT 0
DT 0
DT 0
GN T
                                                                                                                                            Š
                                                                                                                                                                                            Š
                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                      밁
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
TINC_HUMAN STANUARD,

P36941;

P36941;

1 01-JUN-1994 (REL. 29, CREATED)

T 01-JUN-1994 (REL. 29, LAST SEQUENCE UPDATE)

O1-OUT-1996 (REL. 34, LAST ANNOTATION UPDATE)

LYMPHOTOXIN-BETA RECEPTOR PRECURSOR (TUMOR NECRO)

PRIVATED PROTEIN) (TUMOR NECROSIS FACTOR C REC
                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 3
                                                                                                                                                                                                                                                                                                                                           CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OX40_RAT STANDARD; PRT; 271 AA. p15725; O1-APR-1990 (REL. 14, CREATED) O1-APR-1990 (REL. 14, LAST SEQUENCE UPDATE) O1-OCT-1996 (REL. 34, LAST ANNOTATION UPDATE) OX401 RECEPTOR PRECURSOR (OX40 ANTIGEN) (MRC
                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -i- TISSUE SPECIFICITY: ACTIVATED T-CELLS.
-i- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION EMBL; X17037; G57831; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TXGP1L OR OX40.
RATTUS NORVEGICUS (RAT)
EUKARYOTA; METAZOA; CHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MALLETT S., FOSSUM S., BARCLAY A.N.;
EMBO J. 9:1063-1068(1990).
                                                                                                                                                                                                                                                                                                                                                                     REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; S08036; S08036
PIR; S12783; S12783
                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rissue=T-cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    170
                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ROSITE;
                                                                                                                                              155 DVVC 158
                                                                                                                                                                     160 dtvc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142 DGKSVLVNGTKERDVVCG
                                                                                                                                                                                                                                             37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93
                                                                                                                                                                                            95 LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                51 cdhtrdtvchpcepgfyneavnydtckqctqcnhrsgselkqnctptedtvcqcrpgtq- 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: RECEPTOR FOR THE OX40L/GP34 CYTOKINE SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        knlevlqkgtsqtnvicg 187
                                                                                                                                                                                                                -----pr--qds--shklgv-dcvpcppghfspgsnqackpwtnctlsgkqirhpasnsl 159
                                                                                                                                                                                                                                             CDNNRNQICSPCPPNSFSSAGGQRTCDICRQC--KGVFRTRKECSSTSNAECDCTPGFHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HCLGAGCSMCEQD--CKQG---QEL-T-KKG--CKDCCFGTFNDQKR--GICRPWTNCSL
                                                                                                                                                                                                                                                                                           similarity 30.6%; 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90214614
                                                                                                                                                                     163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANTIGEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHORDATA;
                                                                                                                                                                                                                                                                                                                                             29895 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLYCOPROTEIN; TRANSMEMBRANE;
                                                                                                                                                                                                                                                                                           Score 166; I
Pred. No. 5.3
25; Mismatch
                                                                                                                                                                                                                                                                                                                                                                   TNFR-CYS 2.
TNFR-CYS 3 (
TNFR-CYS 4.
                                                                                                                                                                                                                                                                                                                                           POTENTIAL. 65460ED2 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                        TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                      4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                        OX401 RECEPTOR. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                            Mismatches
                              (TUMOR NECROSIS FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                     DB 7;
5.33e-11;
                                                                                                                                                                                                                                                                                                                                                                              (INCOMPLETE).
                     RECEPTOR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0X40).
                                                                                                                                                                                                                                                                                                                  Length 271;
                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT;
                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                           5
```

```
SEPPPE.
                                                                                                           Ş
                                                                                                                                밁
                                                                                                                                                   Š
                                                                                                                                                                         片
                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                  OX40_MOUSE STAN
P47741;
01-FEB-1996 (REL. 3
01-FEB-1996 (REL. 3
01-OCT-1996 (REL. 3
0X40L RECEPTOR PREC
TXGP1L OR OX40.
                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                              REPEAT
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                        t Local
                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 94225209.

CROWE P.D., VAN ARSDALE T.L., WALTER B.N., WARE C.F., EHRENFELS B., BROWNING J.L., DIN W.S., GOODWIN R.G., (SCIENCE 264:707-710(1994).

-I- FUNCTION: RECEPTOR FOR THE LYMPHOTOXIN-BETA. POSS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE LIVER;
MEDLINE; 93252381
BAENS M., CHAFFANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; C
EUTHERIA; PRIMATES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RECEPTOR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENOMICS 16:214-218(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION.
                                                                                                           128
                                                                                                                                179
                                                                                                                                                                          119
                                                                                                                                                     82
                                                                                                                                                                                                                   59
                                                                                                                                                                                               28
                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH
                                                                                                           QKRGI-CRPWINCSLDGKSVLVNGIKERDVVCGPSPADLSPGASS
                                                                                                                          sspsarcqphtrcenqglveaapgtaqsdttcknpleplppemsg
                                                                                                                                                                        krktgcrcqpgmfcaawalecthcellsdcppgteaelkdevgkgnnhcvpckaghfqnt 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600979;
                                                                                                                                                    TSNAECDCTPGFHCLG-A-GCSMCE--QDCKQG-Q-ELTK---KGCKDC--C-FGTF-ND
                                                                                                                                                                                              CSNCPAGTF ---- CDNNRNQICSPCPPNSFSSA-GGQRTCDICRQCKGV--FRTRKECSS
                                                                                                                                                                                                                  csrcppgtyvsakcsrirdtvcatcaensynehwnylticqlcrpcdpvmgleeiapcts 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600979; -.
P19999; 1CLG.
TE; PS00652; TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        L04270; G339762;
                                                                                                                                                                                                                                        Similarity 31.5%;
52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEMBRANE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAFFANET
                                                                                                                                                                                                                                                                                   ă,
              PRECURSOR
                                                                   STANDARD;
             33, CREATED)
33, LAST SEQUENCE UPDA:
34, LAST ANNOTATION UP:
ECURSOR (OX40 ANTIGEN).
                                                                                                                                                                                                                                                  8.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
.
                                                                                                                                                                                                                                                                                  46709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CASSIMAN
                                                                                                                                                                                                                                                                                  WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLYCOPROTEIN;
                                                                                                                                                                                                                                                   Score 158;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                   TNER-CYS 3.
TNER-CYS 4.
BY SIMILARI:
BY SIMILARI
                                                                                                                                                                                                                                       Pred. No. 1.03e-09;
26; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                            TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL).
4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                              POTENTIAL.
                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LYMPHOTOXIN-BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAI
                                                                                                                                                                                                                                                                                                              Y SIMILARITY.
                                                                                                                                                                                                                                                                                  203B82DD CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.J.,
                                                                  272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEN
                                                                                                                                                                                                                                                   DB 9;
.03e-09;
                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BERGHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECEPTOR.
                                                                                                                                                                                                                                                            Length 435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POSSIBLE FUNCTION
                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Η.,
                                                                                                                                223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HTIMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HESSION
SMITH C.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MARYNEN
                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (C.,
                                                                                                                                                                                                                                      Gaps
                                                                                                                                                     127
                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H
```

```
CC - - E H H LL
                                                                                                                                                                                                                                                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SO THE TERM TO SERVICE OF THE TERM OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE; 94170844.

LATZA U., DUERKOP H., SCHNITTGER S.,

HUMMEL M., FONATSCH C., STEIN H.;

EUR. J. IMMUNOL. 24:677-683(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                         OX40_HUMAN STANDARD; PRT; 277 AA. P43489; O1-NOV-1995 (REL. 32, CREATED) O1-NOV-1995 (REL. 32, LAST SEQUENCE UPDATE) O1-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) OX40L RECEPTOR PRECURSOR (ACT35 ANTIGEN) (TAX-TRANSCRIPTIONALLY ACTIVATED GLYCOPROTEIN 1 RECEPTOR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
DOMAIN
                                                                                                                                   EUTHERIA;
                                                                                                                                                      EUKARYOTA;
                                                                                                                                                                                          TXGP1L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE; 9
BIRKELAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLAASSEN E., NOELLE R.J., FELL H
J. IMMUNOL. 151:5261-5271(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; Z21674;
EMBL; X85214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NIAMOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BARCLAY A.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CALDERHEAD D.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BALB/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EUTHERIA;
                                                                                                                                                                                                                                                                                                                                                                                              155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111
                                                                                                                                                                                                                                                                                                                                                                                                                                161 davc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: RECEPTOR FOR THE OX40L/GP34 CYTOKINE.
SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION
                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                              DVVC
                                                                                                                                                    SAPIENS (HUMAN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----pr--qds--gyklgv-dcvpcppghfspgnnqackpwtnctlsgkqtrhpasdsl 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNNRNQICSPCPPNSFSSAGGQRTCDICRQC--KGVFRTRKECSSTSNAECDCTPGFHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMUNOL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
38; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94044750.
AD D.M., BUHLMANN J.E.,
(E., NOELLE R.J., FELL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM N.A.
95255413.
                                                                                                                                   PRIMATES
                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
20
20
212
237
26
26
26
26
104
125
144
15
272 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G312828;
G732819;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΑĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COPELAND N.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25:926-930(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANTIGEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19
272
211
236
272
165
165
103
124
144
                                                                                                                                                      CHORDATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30153 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLYCOPROTEIN; TRANSMEMBRANE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 140; DB 7;
Pred. No. 6.53e-07
21; Mismatches 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNFR-CYS 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC (POTENTIAL). 4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
OX40L RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR
                                                                                                                                                      VERTEBRATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -> G (IN REF. 2 67D1B978 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H.;
       OX40L/GP34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GILBERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEN
                                                              RINGELING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (INCOMPLETE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EERTWEGH
                                                                                                                                                      TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JENKINS
                                                            J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                              EITELBACH
                                                                                                                                                        MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
                                                            .
F)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ι
V
```

```
RESULT
ID NO
AC PO
DT 01
DT 01
DT 01
DT 01
DT 02
R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SETTETT FETTETT XWR CCC
  S
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
-!- SUBUNIT: NGF RECEPTOR CAN FORM A HOMODIMER THI
BOND FORMATION.
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN
-!- PTM: N- AND O-GLYCOSYLATED AND IS PHOSPHORYLA
-!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTI
EMBL; X05137; G56756; -
EMBL; X61269; -; NOT_ANNOTATED_CDS.
PIR; A26431; A26431.
HSSP; P19438; LTNR.
PROSITE; PS00652; TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
DOMAIN
DOMAIN
REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                             NGFR_RAT
P07174;
                                                                                                                                   METSIS
                                                                                                                                                                                                    RADEKE
NATURE
                                                                                                                                                                                                                                                          NGFR.
RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAZOA; CHORDATA;
EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIM; 600:
PROSITE;
                                                                                                                                                                                                                                                                                                                01-APR-1988 (REL. 07, CREATED)
01-APR-1988 (REL. 07, LAST SEQUENCE UPDATE)
01-NOV-1995 (REL. 32, LAST ANNOTATION UPDATE)
LOW-AFFINITY NERVE GROWTH FACTOR RECEPTOR PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                        WEDLINE; 93077038.
                                                                                                                                                                     FISSUE-LIVER;
                                                                                                                                                                              SEQUENCE OF 1-22 FROM N.A.
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECEPTOR;
                                                                                                                                                                                                                                                                                                        (GP80-LNGFR).
                                                                                                                                                                                                                                                                                                                                                                                                                                         163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112
                                                                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SIMILARITY: CONTAINS A LA-NGER/TNER-TYPE CYSTEINE-RICH REGION
                                                                                                            FUNCTION: LOW AFFINITY RECEPTOR NT-3, AND NT-4.
                                                                                                                                   IS M., TIMMUSK T., ALLIKMETS 121:247-254(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                daicedrdppatqpqetqgpparp 186
| :| | : | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     csrsqntvcrpcgpgfyndvvsskpckpctwcnlrsgserkqlctatqdtvcrc-ra---
| ::| :| || | :: : : | | |: |::| :: | | ::
                                                                                                                                                                                                                                                                                                                                                                                                                   DVVC-GPSPADLSPGASSVTPPAP 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGAGCSMCEQDCKQGQELTKKGCKDCCFGTFNDQKRGICRPWTNCSLDGKSVLVNGTKER 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNNRNQICSPCPPNSFSSAGGQRTCDICRQCK-GVFRTRKE-CSSTSNAECDCTPGFHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -gtq-pl-d-sykpgvd-----capcppghfspgdnqackpwtnctlagkhtlqpasnss
                                                                                                                                           , X
                                                                                                                                                                                                   E; 87115859.
M.J., MISKO T.P.,
325:593-597(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T-CELL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 277
29 277
29 214
15 235
70 169
107
1166
1167
1146
1160
29340 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G472958;
                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANTIGEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TNFR_NGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.3%;
                                                                                                                                                                                                                HSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLYCOPROTEIN; TRANSMEMBRANE; REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 141; DB 7;
Pred. No. 4.60e-07;
                                                                                                                                                                                                                .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TNFR-CYS 1.
TNFR-CYS 2.
TNFR-CYS 3 (INCOMPLETE).
TNFR-CYS 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
CYTOPLASMIC (POTENTIAL)
4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                     VERTEBRATA;
                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                     I MEMBRANE PROTEIN.
AND IS PHOSPHORYLATED ON SEF
NGFR/TNFR-TYPE CYSTEINE-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E0EE6765 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                              R.,
                                                                                                                                                                                                                HERZENBERG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RECEPTOR.
                                                                                                                        WHICH CAN
                                                                                                                                              SAARMA M.,
                                                                                                                                                                                                                                                                                                                                                                       425
                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                      TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                L.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61;
                                                                                                                        BIND
                                                                                                  THROUGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 277;
                                                                                                                                              PERSSON H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 16;
                                                                                                                                                                                                                SHOOTER
                                                                                                                        TO NGF,
                                                                                                                                                                                                                                                                                                                  (NGF
                                                                 ON SERINE
                                                                                                  DISULFIDE
                                                                                                                                                                                                                                                                                                                  RECEPTOR)
                                                       REGION
                                                                                                                                                                                                                .
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111
```

```
Š
                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 2
                                                                                                                                                                                                                                   P25942;
01-MAY-1992
01-MAY-1992
01-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
 CHAIN
DOMAIN
TRANSMEM
                             PROSITE; F
RECEPTOR;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
                                                                            STAMENKOVIC I., CLARK E.A., SEED B.;
EMBO J. 8:1403-1410(1989).
-!- FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN AS CD401-
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- TISSUE SPECIFICITY: B-CELLS AND IN PRIMARY CARCINOMAS.
-!- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH
EMBL; X60592; G29851; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
REPEAT
                                                          PIR; S04460; S04460
MIM; 109535; -.
                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE; 89356608.
                                                                                                                                                                                  EUTHERIA;
                                                                                                                                                                                            HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; C
                                                                                                                                                                                                                        CD40L RECEPTOR
                                                                                                                                                                                                                                                                            CD40_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PHOSPHORYLATION;
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS50017; DEATH_DOMAIN.
RECEPTOR; NEUROGENESIS; TRANSMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                           124 eacsvcevgsglvfscqdkqntvceecpegtysdeanhvdpclpctvcedterqlrectp 183
                                                                                                                                                                                                                                                                                                                                     84 wadaeceeipg
                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                    TSNAECDCTPG
                                                                                                                                                                                                                                                                                                                                                           DPCSNCPAGT - -
                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 31.0%, 22; Conservative
                                                 PS00652; TNFR_NGFR
                                                                                                                                                   89356608
                                                                                                                                                                                   PRIMATES.
                                        B-CELL;
                                                                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                  (REL. 22, CREATED)
(REL. 22, LAST SEQUENCE UPDATE)
(REL. 29, LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30
252
274
32
32
32
32
109
149
158
  20
20
194
                                                                                                                                                                                                                          PRECURSOR (B-CELL SURFACE ANTIGEN CD40) (BP50) (CDW40).
                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                      194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIGNAL.
                                                                                                                                                                                                                                                                                                                    91
GLYCOPROTEIN; TRANSMEMBRANE;
19 POTENTIAL.
277 CD40L RECEPTOR.
193 EXTRACELLULAR (POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                          -F-CDNNRNQICSPCPPNSFSSAGGQR-TCDICRQCKGVFRTRKECSS
                                                                                                                                                                                                                                                                                                                                                                                                           7.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
147
165
181
189
71
                                                                                                                                                                                          CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA
                                                                                                                                                                                                                                                                                                                                                                                                                                          45432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEMBRANE; GLYCOPROTEIN; REPEAT;
                                                                                                                                                                                                                                                                                                                                                                                                                                          WW.
                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
18; 1
                                                                                                                                                                                                                                                                                                                                                                                                           Score 138;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEATH DOMAIN.
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
7D78F258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 X TNFR-CYS.
TNFR-CYS 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TNFR-CYS 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SER/THR-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NGF RECEPTOR.
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFR-CYS
                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                            277 AA
                                                                                                                                                                                                                                     UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                           DB 6;
           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                  26;
                                        REPEAT; SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                    Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                       CD40L
                                                                                                                                                                                                                                                                                                                                                                                                  ç,
                                                                                         REGION
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                          80
```

ω

Search completed: Tue Mar 24 17:04:31 1998 Job time : 48 secs.